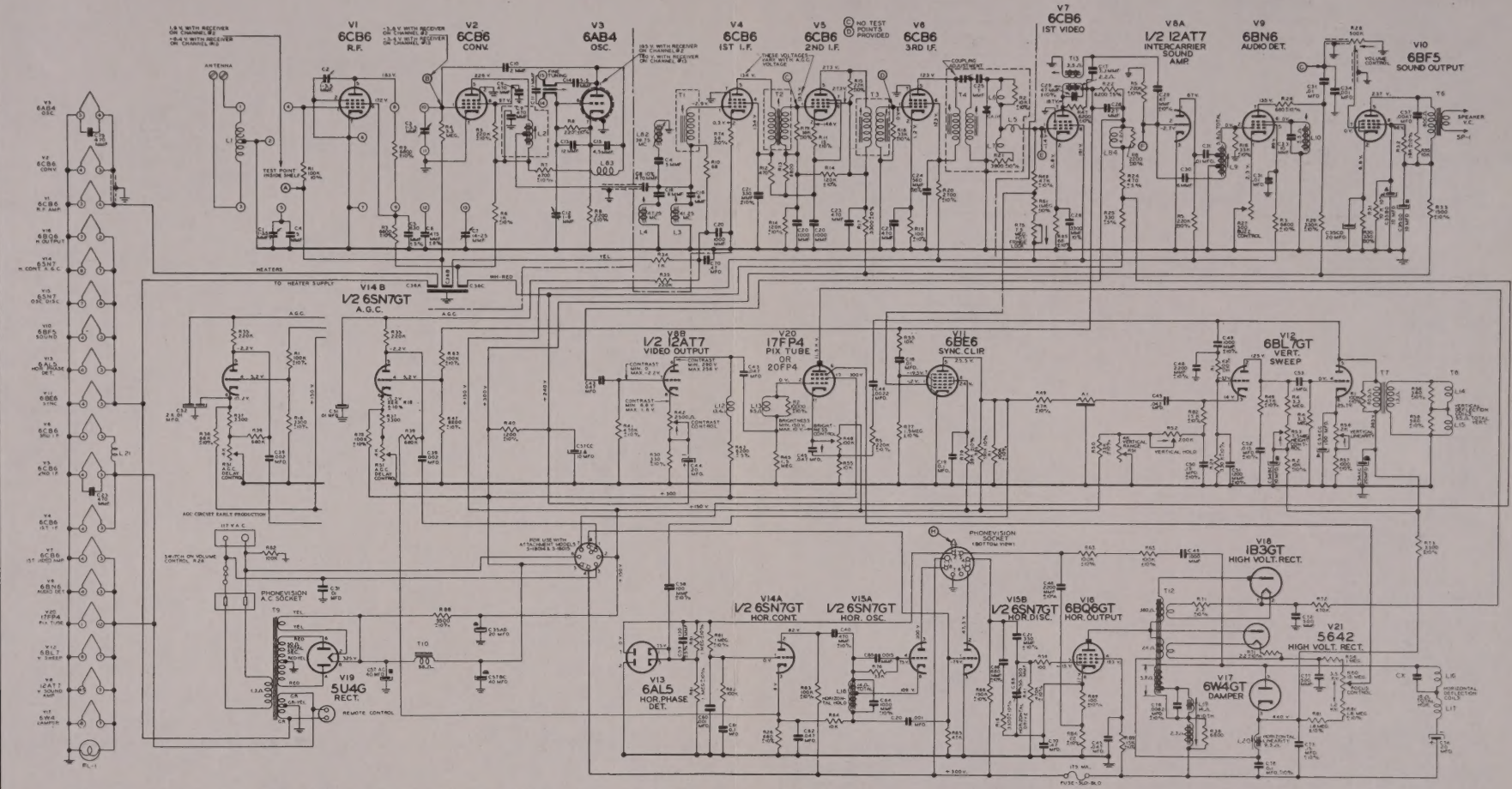
NO. 151

CONTENTS

TRADE NAME AND MODEL	SET AND FOLDER NO.
AIR KING Tel. Rec.	
17C2, 17C5, B, 17C7 (Ch. 700-96)	151-2
17K1, 17M1 (Ch. 700-96)	151-2
17T1 (Ch. 700-96)	151-2
20C1, 20C2 (Ch. 700-93)	151-2
20K1 (Ch. 700-95)	151-2
20M1 (Ch. 700-93)	151-2
AIRLINE	
05GCD-3658A	151-3
15WG-2749E, F	151-4
15WG-2752D, E	151-4
ARVIN Tel. Rec.	
5210, 5211, 5212 (Ch. TE315)	151-5
BELL SOUND	
374SS	151-6
GENERAL ELECTRIC	
535	151-7
MASCO	
ME-18, ME-18P	151-8
OLYMPIC	
51-421W	151-9
RADIO CRAFTSMEN Tel. Rec.	
RC201	151-10
TRUETONE Tel. Rec.	
2D1194A	151-11
ZENITH	
H-503, Y (Ch. 5H41)	151-12
H2229R, H2230E, R (Ch. 22H21) Tel. Rec.	151-13
H2241R (Ch. 22H21) Tel. Rec.	151-13
H2242E, R (Ch. 22H22) Tel. Rec.	151-13
H2252R, H2253E (Ch. 22H21) Tel. Rec.	151-13
H2254R (Ch. 22H22) Tel. Rec.	151-13
H3273E, H3274R (Ch. 22H21) Tel. Rec.	151-13
H3284R (Ch. 22H22) Tel. Rec.	151-13
J2026R (Ch. 20J22) Tel. Rec.	151-1A
J2027E, R, J2029E, R, J2030E, R, J2040E, J2042R, J2043R, J2044E, R (Ch. 20J21)	151-1A
J2051E, J2053R, J2054R, J2055R (Ch. 20J22) Tel Rec.	151-1A
J2126R (Ch. 21J21) Tel. Rec.	151-1A
J2127E, R, J2129E, R, J2130E, R, J2140E, J2142R, J2143R, J2144E, R (Ch. 21J20) Tel. Rec.	151-1A
J2151E, J2153R, J2154R, J2155R (Ch. 21J21) Tel. Rec.	151-1A
J2868R (Ch. 20J21) Tel. Rec.	151-1A
J2968R (Ch. 21J20) Tel. Rec.	151-1A
J3069E (Ch. 20J21) Tel. Rec.	151-1A
J3169E (Ch. 21J20) Tel. Rec.	151-1A

The suffix letter "A," following the Folder number, indicates a "Preliminary Data Folder," designed to provide immediately data on television receivers—pending coverage in standard PHOTOFACT Form.



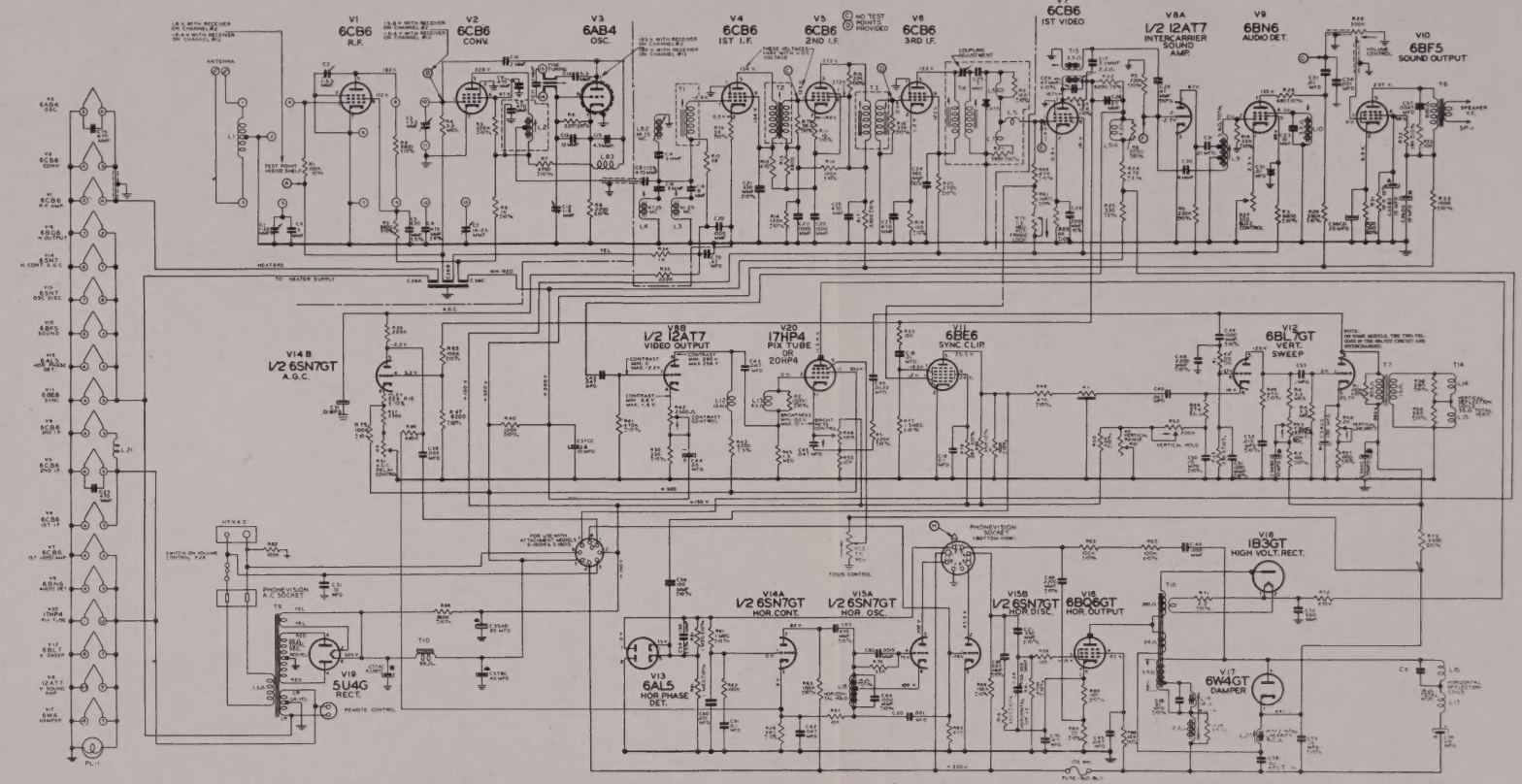
The Cooperation of the Manufacturer of This Receiver Makes It Possible to Bring You This Service.

ZENITH CHASSIS 21J20, 21J21.

© Howard W. Sams & Co., Inc. 1951

ST-2
L22
L23
L24
L25
L26
ST-3
L27
L28
L29
L30
L31
ST-4
L32
L33
L34
L35
L36
ST-5
L37
L38
L39
L40
L41
ST-6
L42
L43
L44
L45
L46
ST-7
L47
L48
L49
L50
L51
ST-8
L47
L53
L54
L55
L56
ST-9
L47
L58
L59
L60
L61
ST-10
L47
L63
L64
L65
L66
ST-11
L47
L68
L69
L70
L71
ST-12
L47
L73
L74
L75
L76
ST-13
L77
L78
L79
L80
L81

MODEL	SCREEN	TV CHASSIS
J2026R	20" Rectangular	20J22
J2027R	17" Rectangular	20J21
J2027E	17" Rectangular	20J21
J2029E	17" Rectangular	20J21
J2029R	17" Rectangular	20J21
J2030E	17" Rectangular	20J21
J2030R	17" Rectangular	20J21
J2040E	17" Rectangular	20J21
J2042R	17" Rectangular	20J21
J2043R	17" Rectangular	20J21
J2044E	17" Rectangular	20J21
J2044R	17" Rectangular	20J21
J2051E	20" Rectangular	20J22
J2053R	20" Rectangular	20J22
J2054R	20" Rectangular	20J22
J2055R	20" Rectangular	20J22
J2126R	20" Rectangular	21J21
J2127E	17" Rectangular	21J20
J2127R	17" Rectangular	21J20
J2129E	17" Rectangular	21J20
J2129R	17" Rectangular	21J20
J2130E	17" Rectangular	21J20
J2130R	17" Rectangular	21J20
J2140E	17" Rectangular	21J20
J2142R	17" Rectangular	21J20
J2143R	17" Rectangular	21J20
J2144E	17" Rectangular	21J20
J2144R	17" Rectangular	21J20
J2151E	20" Rectangular	21J21
J2153R	20" Rectangular	21J21
J2154R	20" Rectangular	21J21
J2155R	20" Rectangular	21J21
J2868R	17" Rectangular	20J21
J2968R	17" Rectangular	21J20
J3069E	17" Rectangular	20J21
J3169E	17" Rectangular	21J20



The Cooperation of the Manufacturer of This Receiver Makes It Possible to Bring You This Service.

ZENITH CHASSIS 20J21, 20J22.

PHOTOFACT* Folder

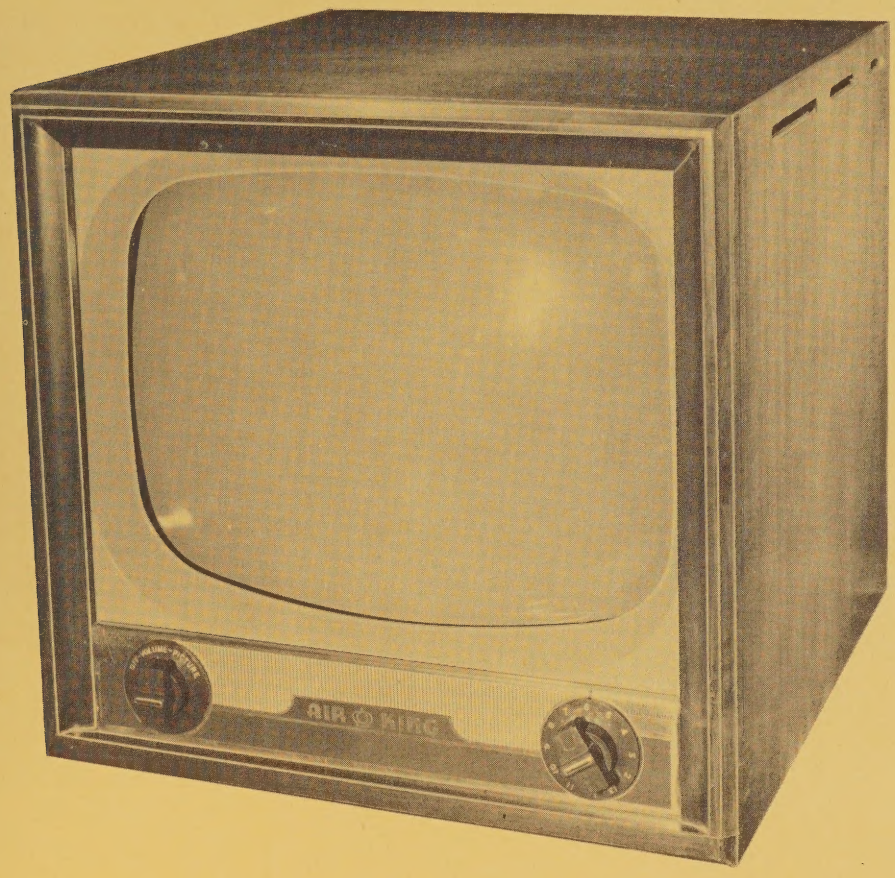
*TRADE MARK

AIR KING MODELS 17C2, 17C5, B, 17C7, 17K1, 17M1, 17T1, 20C1, 20C2, 20K1, 20M1

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.



AIR KING MODELS 17C2, 17C5, B, 17C7, 17K1, 17M1, 17T1, 20C1, 20C2, 20K1, 20M1

MODEL 17T1C

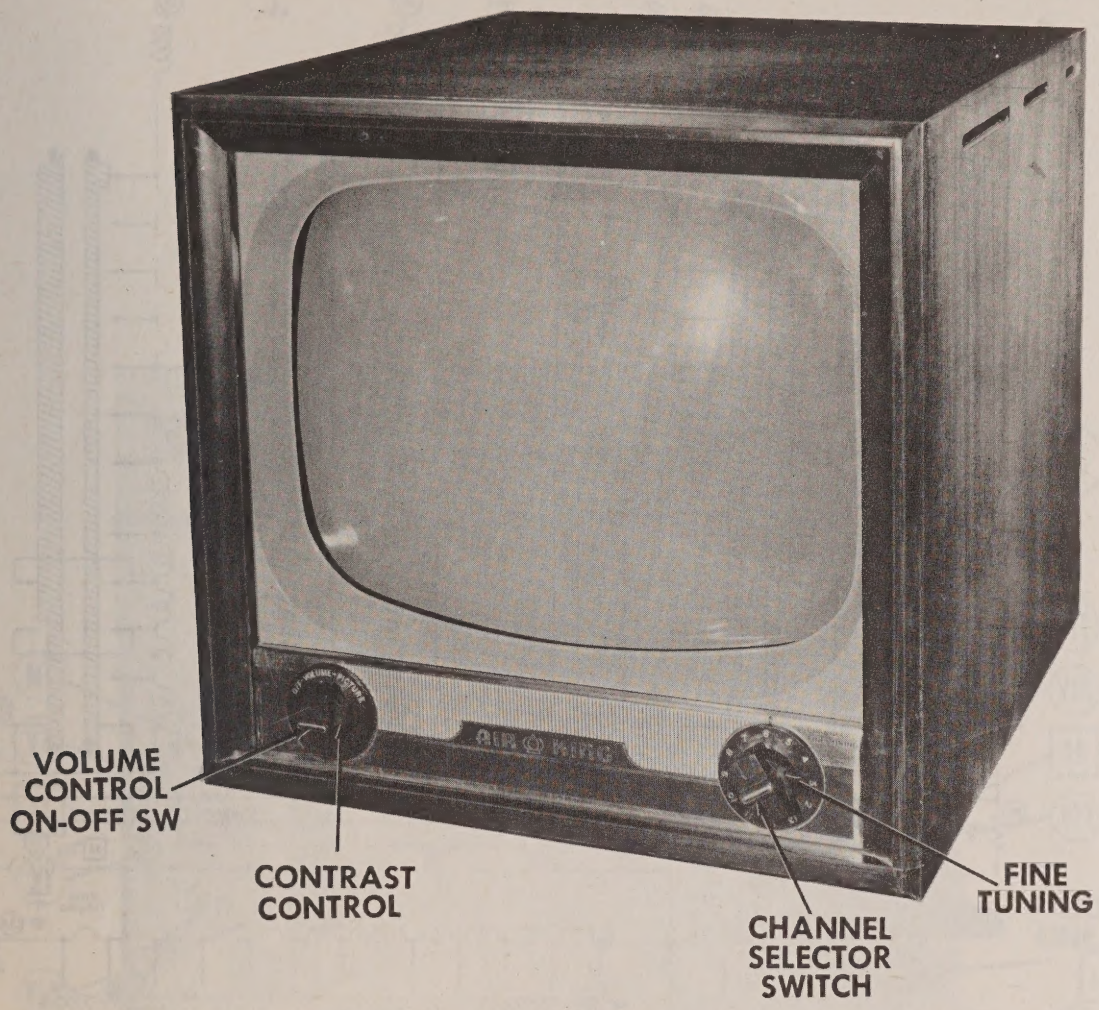
HOWARD W. SAMS & CO., INC. • Indianapolis, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 11-51 SET 151 FOLDER 2

PHOTOFACT* Folder
*TRADE MARK

AIR KING MODELS 17C2, 17C5, B, 17C7, 17K1, 17M1, 17T1, 20C1, 20C2, 20K1, 20M



AIR KING MODELS 17C2, 17C5, B, 17C7, 17K1, 17M1, 17T1, 20C1, 20C2, 20K1, 20M1

AIR KING MODEL 17T1C

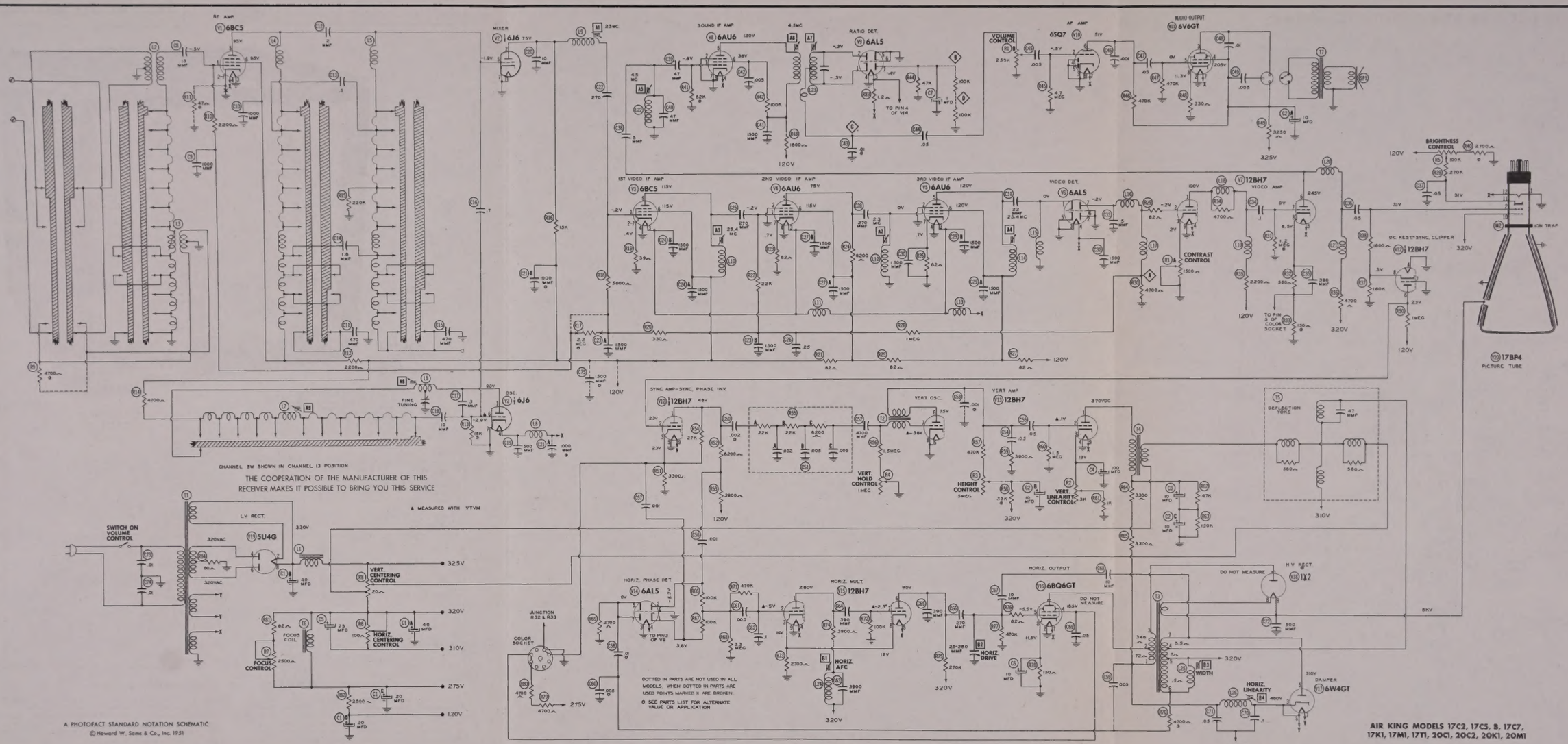
TRADE NAME	Air King, Models 17C2, 17C5, B, 17C7, 17K1, 17M1, 17T1, C (Ch. 700-96), 20C1, 20C2 (Ch. 700-93), 20K1 (Ch. 700-95), 20M1 (Ch. 700-93).
MANUFACTURER	Air King Products Co., 170 53rd. St., Brooklyn, N. Y.
TYPE SET	Television Receiver
TUBES	Twenty
POWER SUPPLY	110-120 Volts AC - 60 Cycle — RATING 1.7 Amp. at 117 Volts AC
TUNING RANGE—CHANNELS	2 thru 13

INDEX

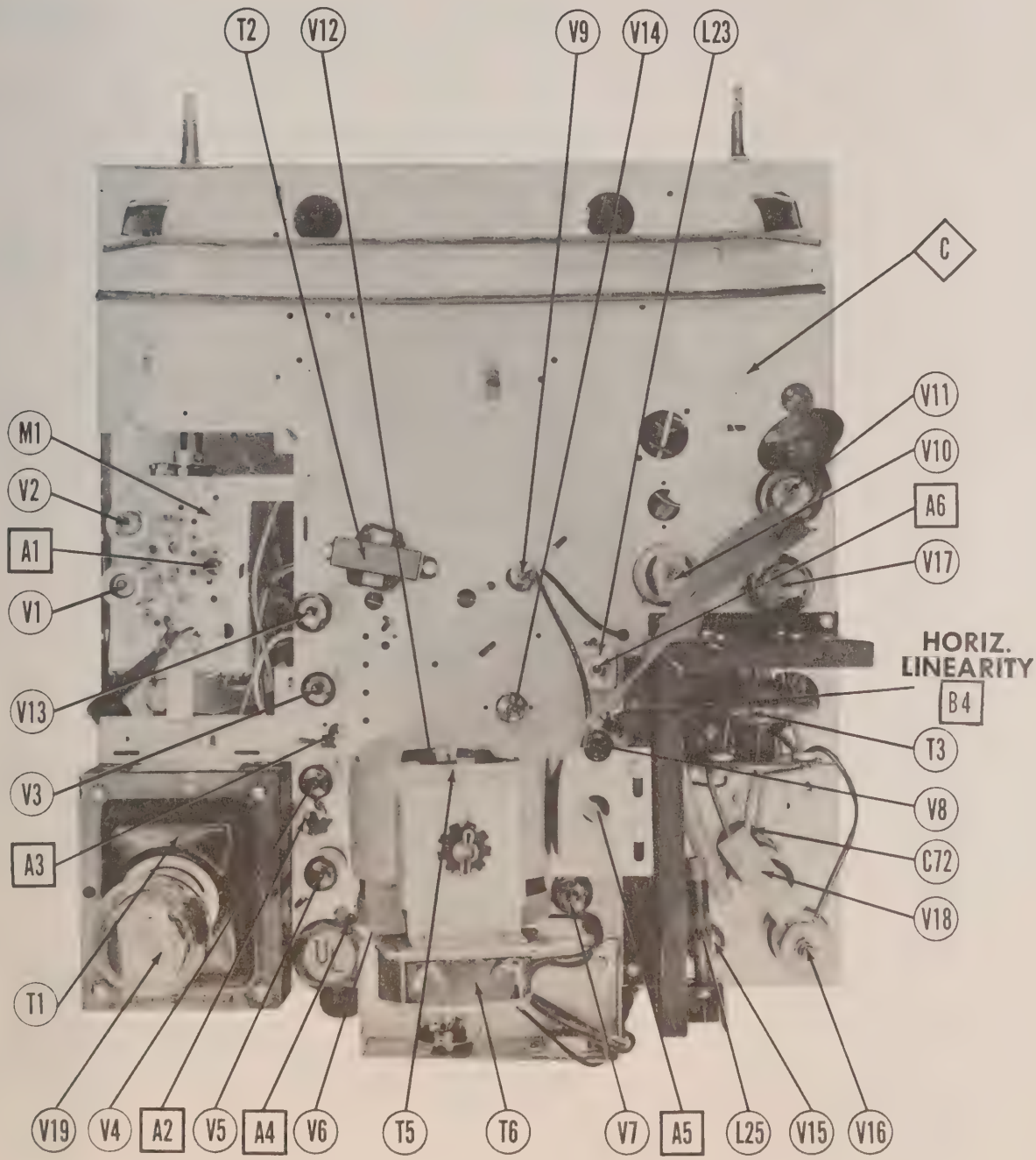
Alignment Instructions 6
Disassembly Instructions 7
Horizontal Sweep Circuit Adjustments 7
Parts List and Description 12, 13, 15
Photographs
Cabinet - Rear View 7
Capacitor and Alignment Identification 4, 9
Photographs (Cont.)
Chassis - Top View 3
RF Tuner 10
Resistor and Inductor Identification 11, 14
Resistance Measurements 8
Schematic 2
Tube Placement Charts 5

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

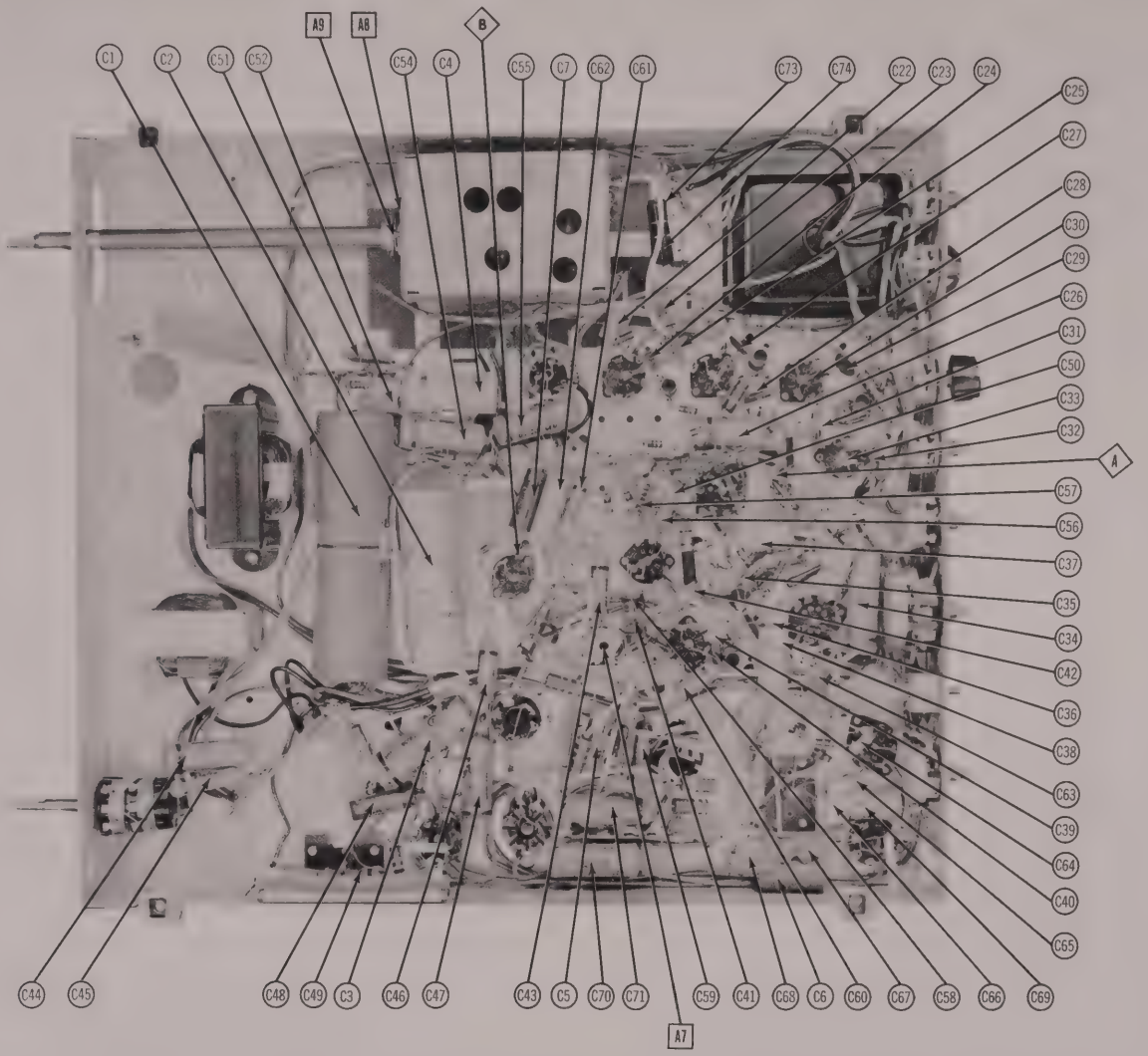
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America



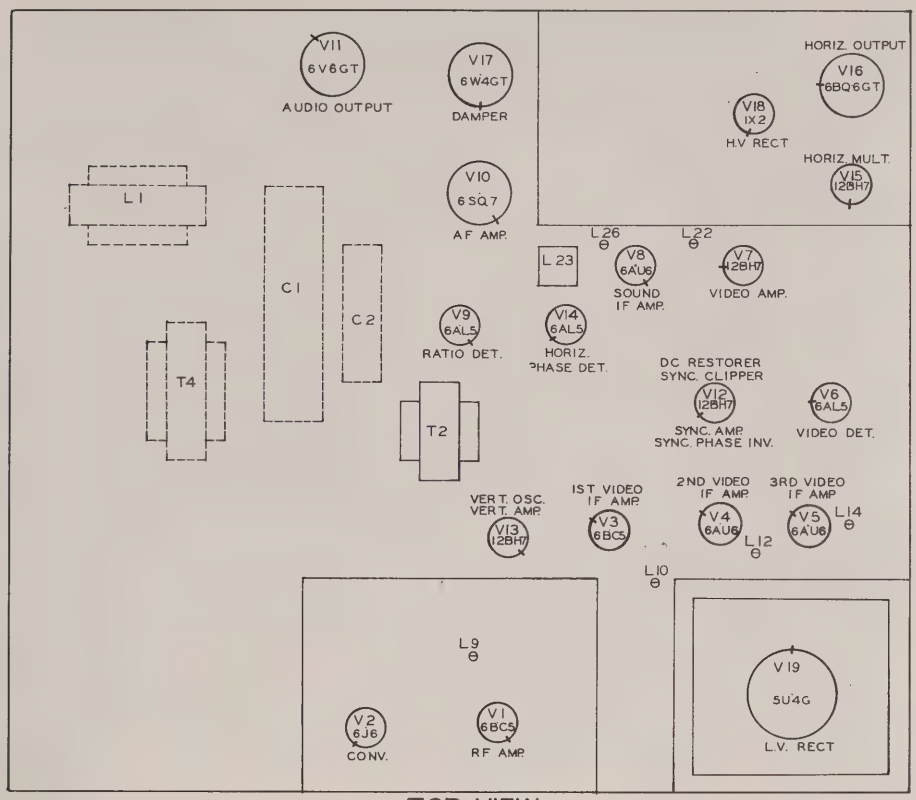
AIR KING MODELS 17C2, 17C5, 8, 17C7, 17K1, 17M1, 17T1, 20C1, 20C2, 20K1, 20M1



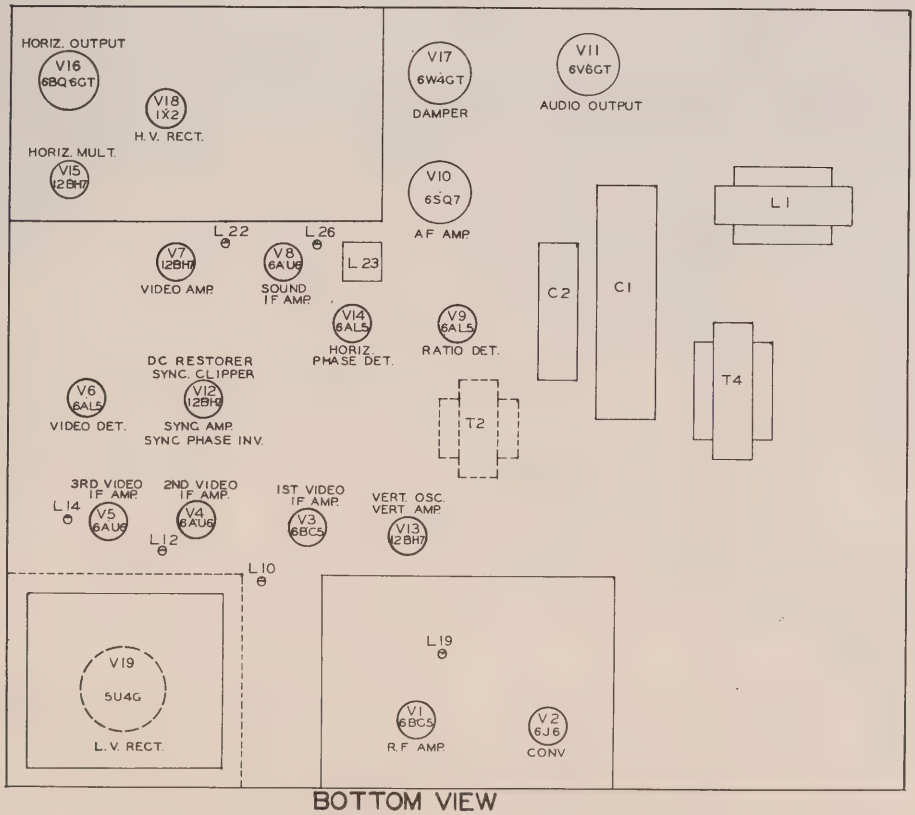
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal output tube, (V16), from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube, (V2), from its socket and replace it with a 6J6 which has pin 1 removed, this will disable the local oscillator and prevent the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded lead of C26, connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	23MC (unmod.)	Any	DC probe to Point (A). Common to chassis.	A1, A2	Adjust for maximum deflection.
2.	"	"	25.4MC	"	"	A3, A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to an ungrounded tube shield floating over dummy converter tuve, (V2). Low side to chassis.	24MC (10MC SWP)	21.2MC 25.7MC	Any	Vert. Amp. to Point (A). Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A1 thru A4 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (± 1%) resistors in series from Point B to chassis. The junctions of these two resistors is alignment Point D as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.01MFD.	High side to pin 7, (Grid) of 12BH7, (V7). Low side to chassis.	4.5MC (unmod.)	Any	DC probe to Point (B). Common to chassis.	A5, A6	Adjust for maximum deflection.
5.	"	"	"	"	DC probe to Point (C). Common to Point (D).	A7	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	.01MFD.	High side to pin 7, (Grid) of 12BH7, (V7). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. Amp. to Point (B). Low side to chassis.	A5, A6	Disconnect stabilizer capacitor C5. Adjust for maximum amplitude and symmetry as per figure 2.
5.	"	"	"	"	"	Vert. Amp. to Point (C). Low side to chassis.	A7	Reconnect capacitor C5. Adjust A7 so 4.5MC occurs at center of crossover lines as per figure 3. SLIGHTLY retouch A6 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Leave the bias connected as during video IF alignment.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Two 120Ω carbon resistors	Across antenna terminal with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. Amp. to Point (A). Low side to chassis.	A8	Adjust to place video marker at 50% on response curve as shown in figure 4.
7.	"	"	207MC (10MC SWP)	205.25MC 209.75MC	12	"		Check all high band channels to see that the video marker can be properly placed well within the range of the fine tuning control. If not make compromise adjustment of A8.
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
8.	"	"	85MC (10MC SWP)	83.25MC 87.75MC	6	"	A9	Adjust to place video marker at 50% on response curve as shown in figure 4.
9.	"	"	79MC (10MC SWP)	77.25MC 81.75MC	5	"		Check all low band channels to see that the video marker can be properly placed well within the range of the fine tuning control. If not make compromise adjustment of A9.
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

THE RF PORTION OF THIS TUNER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION SHOULD NOT BE REQUIRED IN THE FIELD.

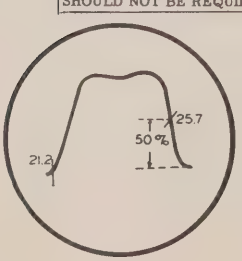


FIG.1

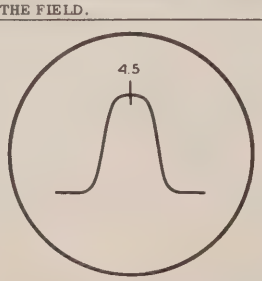


FIG. 2

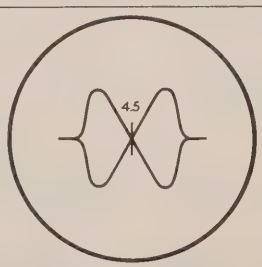


FIG. 3

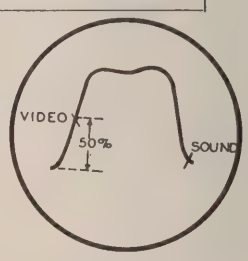
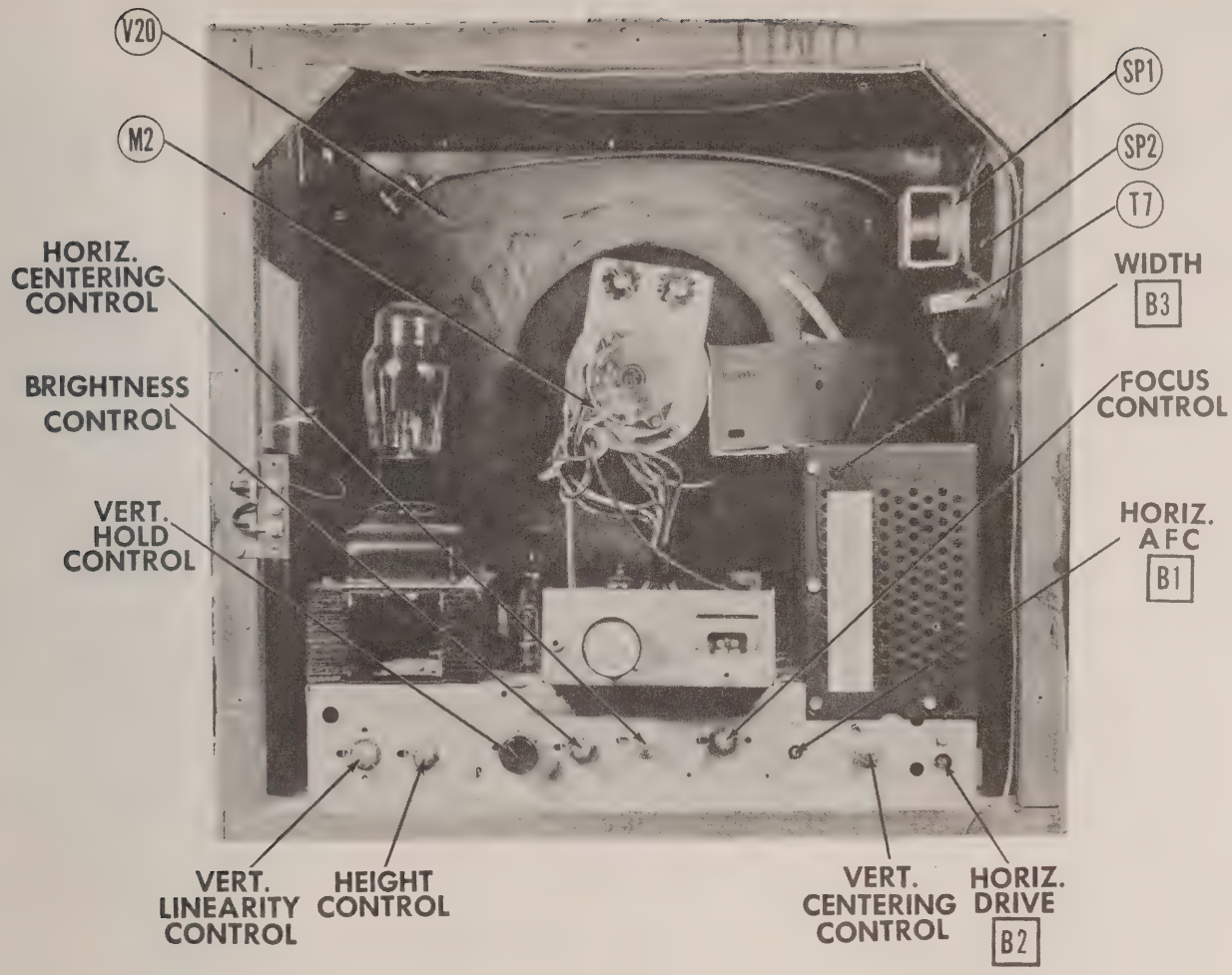


FIG.4



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Adjust the horizontal AFC slug, (B1), until the picture synchronizes horizontally. Switch to another channel and back again. If the picture does not immediately synchronize, readjust B1 and repeat the check.

Turn the horizontal drive trimmer, (B2), counter-clockwise as far as possible without crowding or bright vertical lines appearing in the picture. The trimmer must be at least 3/4 turn counter-clockwise from tight.

Adjust the width slug, (B3), until the picture is slightly wider than necessary to fill the mask horizontally.

Adjust the horizontal linearity slug, (B4), until the picture is symmetrical from left to right.

DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove eight wood screws from rear cover. Remove rear cover.
3. Disconnect built-in antenna.
4. Remove antenna terminal strip.
5. Disconnect speaker.
6. Remove four 7/16" hex head bolts from chassis. Remove chassis.
7. Remove two 11/32" hex nuts from speaker. Remove speaker.

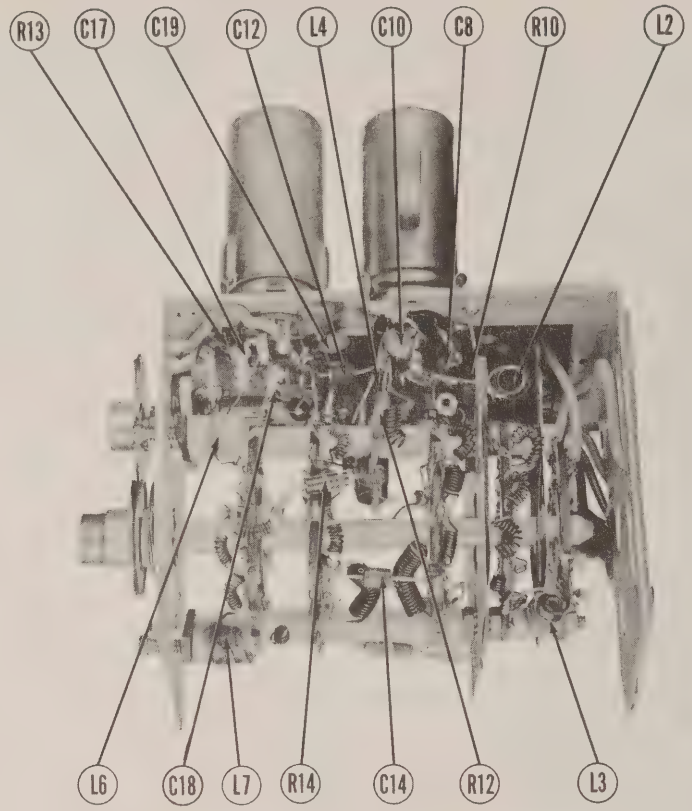
NOTE: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.

RESISTANCE MEASUREMENTS

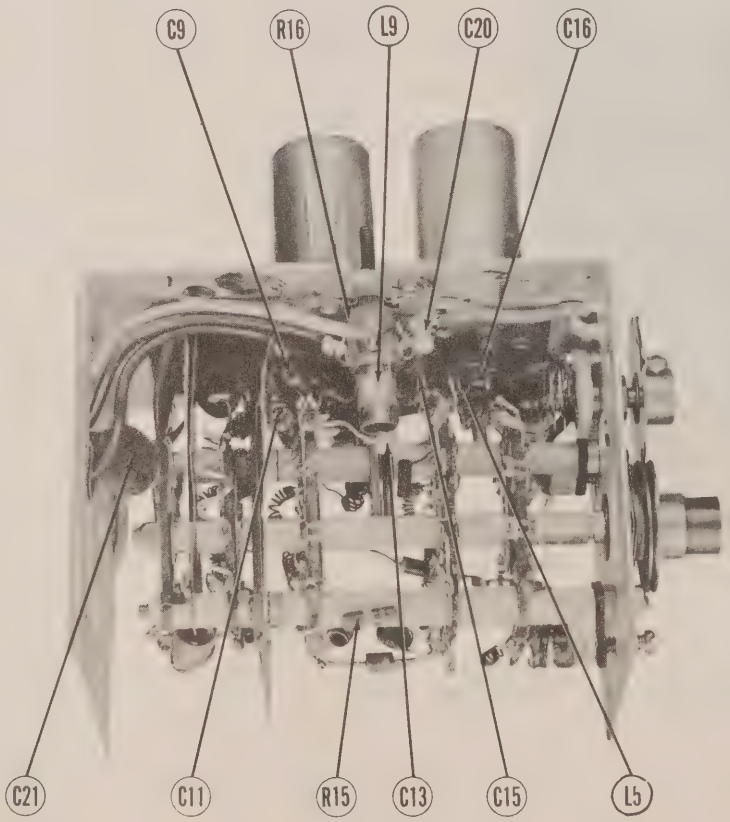
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BC5	3.2Meg	0Ω	0Ω	.1Ω	†5KΩ	†5KΩ	0Ω		
V 2	6J6	†7.5KΩ	†17KΩ	0Ω	.1Ω	220KΩ	15KΩ	0Ω		
V 3	6BC5	1Meg	39Ω	.4Ω	0Ω	†2.8KΩ	†2.8KΩ	39Ω		
V 4	6AU6	1Meg	0Ω	.4Ω	0Ω	†11KΩ	†2.8KΩ	82Ω		
V 5	6AU6	.2Ω	0Ω	.3Ω	0Ω	†2.7KΩ	†2.7KΩ	82Ω		
V 6	6AL5	2.7Ω	0Ω	0Ω	.1Ω	0Ω	0Ω	4.7KΩ		
V 7	12BH7	†4.8KΩ	4.7KΩ	200Ω	.1Ω	.1Ω	†4.7KΩ	1Meg	560Ω	0Ω
V 8	6AU6	82KΩ	0Ω	0Ω	.1Ω	†4.4KΩ	†105KΩ	0Ω		
V 9	6AL5	Inf.	Inf.	.8Ω	0Ω	0Ω	0Ω	47KΩ		
V 10	6SQ7	0Ω	4.7Meg	0Ω	0Ω	0Ω	†470KΩ	.1Ω	0Ω	
V 11	6V6GT	Inf.	0Ω	†3.8KΩ	†3.4KΩ	470KΩ	Inf.	.1Ω	330Ω	
V 12	12BH7	†14KΩ	†1Meg	3.3KΩ	0Ω	0Ω	†1Meg	0Ω	180KΩ	.1Ω
V 13	12BH7	#7.7KΩ	1.5Meg	1.8KΩ	0Ω	0Ω	†2Meg	2.2Meg	0Ω	.1Ω
V 14	6AL5	3.4Meg	3.4Meg	0Ω	.8Ω	2.7KΩ	0Ω	2.7KΩ		
V 15	12BH7	†3.9KΩ	3.7Meg	2.7KΩ	.1Ω	.1Ω	†270KΩ	100KΩ	2.7KΩ	0Ω
V 16	6BQ6GT	470KΩ	0Ω	Inf.	†10KΩ	470KΩ	Inf.	.1Ω	150Ω	Top Cap #100Ω
V 17	6W4GT	†80Ω	Inf.	150KΩ	Inf.	†95Ω	Inf.	#.1Ω	#0Ω	
V 18	1X2	PINS 1-9 HAVE INF. RESISTANCE								Top Cap #450Ω
V 19	5U4G	Inf.	29KΩ	Inf.	100Ω	Inf.	100Ω	Inf.	29KΩ	
V 20	17BP4A	0Ω	180KΩ	PIN 10 †80Ω	PIN 11 †340KΩ	PIN 12 .1Ω				

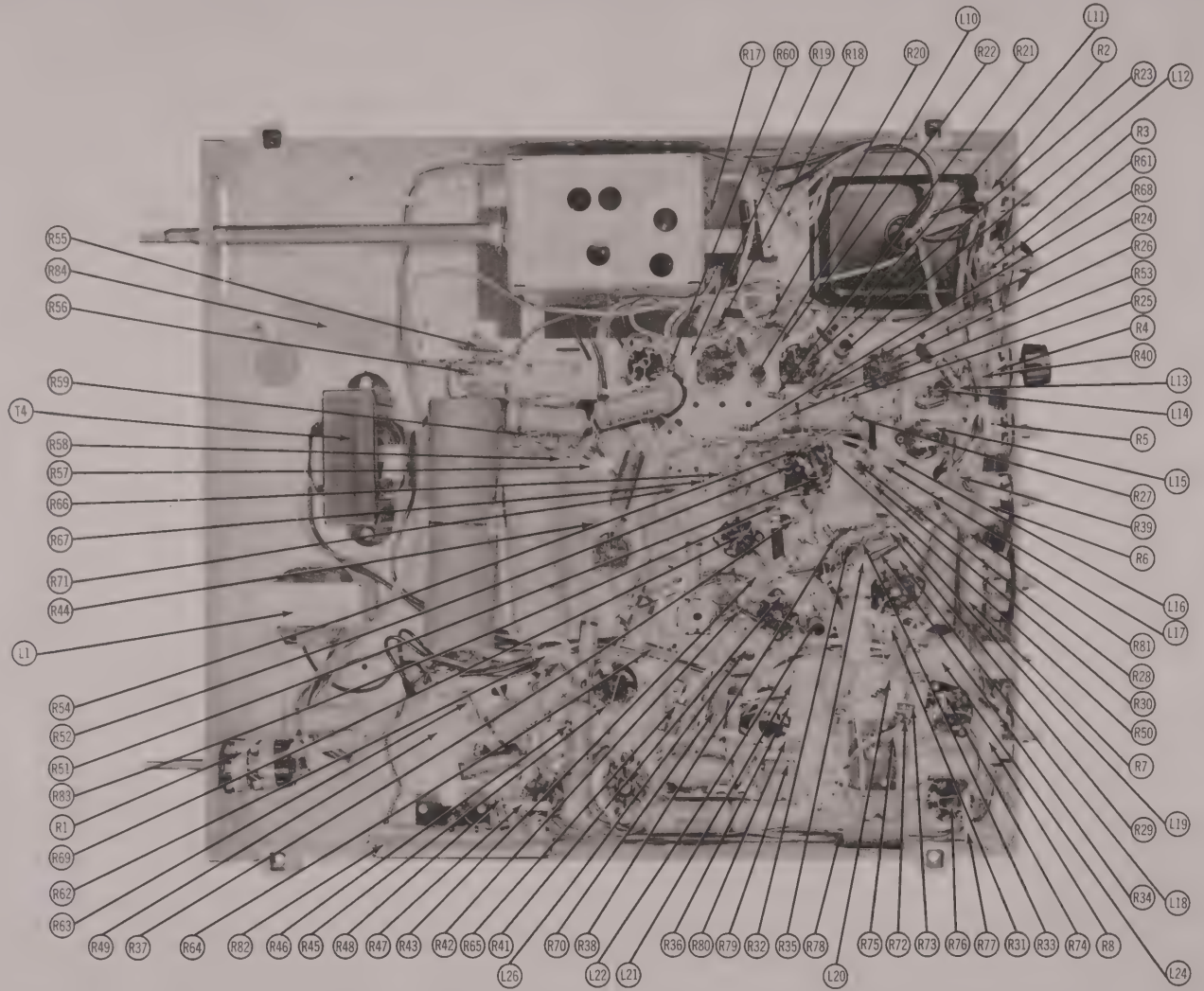
† MEASURED FROM PIN 8 OF V19
# MEASURED FROM PIN 3 OF V17



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No	USE	REPLACEMENT DATA: AIR KING PART No	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6BC5	6BC5	TBD	
V2	Converter	6J6	6J6	TB9	
V3	1st. Video IF Amp.	6BC5	6BC5	TBD	
V4	2nd. Video IF Amp.	6AU6	6AU6	7BK	
V5	3rd. Video IF Amp.	6AU6	6AU6	7BK	
V6	Video Detector	6AL5	6AL5	6BT	
V7	Video Amplifier	12BH7	12BH7	9A	
V8	Sound IF Amp.	6AU6	6AU6	7BK	
V9	Ratio Detector	6AL5	6AL5	6BT	
V10	AF Amplifier	6SQ7	6SQ7	8Q	
V11	Audio Output	6V6GT	6V6GT	7AC	
V12	DC Restorer-Sync. Clipper-Sync. Amp. -Sync. Phase Inv.	12BH7	12BH7	9A	
V13	Vert. Oscillator - Vert. Amplifier	12BH7	12BH7	9A	
V14	Horiz. Phase Det.	6AL5	6AL5	6BT	
V15	Horizontal Mult.	12BH7	12BH7	9A	
V16	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V17	Damper	6W4GT	6W4GT	4CG	
V18A	HV Rectifier A	1X2A	1X2A	9Y	
B	HV Rectifier B	1X2	1X2	9Y	
V19	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No	REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA: SYLVANIA PART No	REPLACEMENT DATA: THOMAS PART No	RTMA BASE TYPE	NOTES
V20	17BP4A	17BP4A	17BP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No	RATING: CAP	RATING: VOLT	REPLACEMENT DATA: AIR KING PART No	REPLACEMENT DATA: AEROVOX PART No	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	PA20144	PRS450 40-40		UPT4445		TVA-2740	Filter
B	40	450		PRS450 20-20		BRD2245		TVA-2730	Filter
C	20	450							Filter
D	20	450							Decoupling
C3A	10	450	PA20135	AFH3-47		UP11145		TVL-3776	Audio Output Dec.
B	10	450							Vert. Osc. Decoupling
C	10	450							Vert. Amp. Decoupling
C3	10	250	PA20145	PRS250/12		BR1225A		TVA-1504	Vert. Amp. Decoupling
C4	100	25	PP20130	PRS-25/100		BRH251A		TVA-1207	Vert. Amp. Cathode
C5	25	12		PRS25-25		BR252A		TVA-1205	Decoupling
C6	10	25	PP30137	PRS25/10		BR102A		TVA-1204	Horiz. Output Cathode
C7	1	50	PA20138	E26E-73		BBR-1-50		TVA-1300	Stabilising Cap.
C8	15			SI15	D6-150		GP1K-150	5GA-Q15	RF Coupling
C9	1000			SI1000	D6-102		GP2L-102	5HK-D1	AGC Filter
C10	1000			BPD-001	DD-102		801-001	5HK-D1	RF Amp. Screen
C11	470			SI470	D6-471		GP2K-471	5GA-T47	RF Amp. Plate
C12	2				TCZ-2.2		NP0K-2R2		RF Coupling
C13	.5				TCZ-.5		NP0K-R50		RF Coupling
C14	1.8								RF Coupling
C15	470			SI470	D6-471		GP2K-471	5GA-T47	Mixer Grid Cap.
C16	.7				TCZ-.68		NP0K-R68		Osc. Coupling
C17	3						N080 333-030		Osc. Feedback
C18	10			SU10NP0	TCZ-10		NP0K-100	5TCC-Q1	Osc. Grid Cap.
C19	500			SI500	D8-501		GP2K-501	5GA-T5	Conv. Fil.
C20	10			SU10NP0	TCZ-10		NP0K-100	5TCC-Q1	Fixed Trimmer
C21A	1000			BPD-2X001	DD-2-102		812-001	5HK-AD1	RF Amp. Fil. *
B	1000								RF Bypass
C22	270	500	PE190-133	1468-0003	D6-271	SW5T3	GP2K-271	MS-33	IF Coupling
C23A	1500		PE-19147	BPD-2X0015	DD-2-152	SW5D15	812-0015	5HK-ED15	AGC Filter
B	1500					SW5D15			AGC Filter
C24A	1500		PE-9147	BPD-2X0015	DD-2-152	SW5D15	812-0015	5HK-ED15	1st. Video IF Dec.
B	1500					SW5D-4			1st. Video IF Fil.
C25	270	500	PE190-133	1468-0003	D6-271	SW5T3	GP2K-271	MS-33	IF Coupling
C26	.25	200	PE194-67	P488-25		GT2P25		2TM-P25	AGC Filter
C27A	1500		PE-19147	BPD-2X0015	DD-2-152	SW5D15	812-0015	5HK-ED15	2nd. Video IF Dec.
B	1500					SW5D15			2nd. Video IF Fil.
C28	270	500	PE190-133	1468-0003	D6-271	SW5T3	GP2K-271	MS-33	IF Coupling
C29A	1500		PE-19147	BPD-2X0015	DD-2-152	SW5D15	812-0015	5HK-ED15	3rd. Video IF Dec.
B	1500					SW5D15			3rd. Video IF Fil.
C30	1500		PA19148	BPD-0015	DD-152	SW5D15	801-0015	5HK-D15	3rd. Video IF Cathode
C31	33	500	PE190-107	1468-00005	D6-220	SW5Q25	GP1K-220	MS-435	IF Coupling
C32	1500		PA19148	BPD-0015	DD-152	SW5D15	801-0015	5HK-D15	Video Det. Fil.
C33	5		PE555-100	SI5NP0	TCZ-4.7		NP0K-050		Video Det. Filter
C34	.1	600	PE194-103	P888-1	DF-104	PTE6P1		6TM-P1	Video Coupling
C35	390	500	PE190-137	1469-0004		SR5T4		MS-34	Video Amp. Cathode
C36	.05	600	PE194-160	P888-05	DF-503	PTE6S5		6TM-S5	Video Coupling
C37	.05	600	PE194-160	P888-05	DF-503	PTE6S5		6TM-S5	Picture Tube Cathode
C38	5		PE555-100	SI5NP0	TCZ-4.7		NP0K-050		Sound IF Coupling
C39	47	500		1469-00005	TCZ-47	SR5Q5	NP0L-470	5TCC-Q47	Sound IF Coupling
C40	47	500		1469-00025	TCZ-47	SR5Q5	NP0L-470	MS-45	Fixed Trimmer
C41	1500		PA19148	BPD-0015	DD-152	SW5D15	801-0015	5HK-D15	Sound IF Plate
C42	.005	900	PE194-151	P888-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Sound IF Screen
C43	.01	600	PE194-155	P888-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	De-emphasis †
C44	.05	600	PE194-160	P888-05	DF-503	PTE6S5		6TM-S5	Audio Coupling
C45	.005	900	PE194-151	P888-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Coupling
C46	.001	600	PE194-145	P888-001	D6-102	PTE6D1	GP2L-102	6TM-D1	AF Amp. Plate
C47	.05	600	PE194-160	P888-05	DF-503	PTE6S5		6TM-S5	Audio Coupling
C48	.01	600	PE194-155	P888-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Output Plate
C49	.005	900	PE194-151	P888-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Output Plate
C50	.002	600		P888-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Vert. Sync. Coupling *

CAPACITORS (CONT.)

ITEM No	RATING: CAP	RATING: VOLT	REPLACEMENT DATA: AIR KING PART No	REPLACEMENT DATA: AEROVOX PART No	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL DUBILIER PART No	REPLACEMENT DATA: ERIE PART No	REPLACEMENT DATA: SPRAGUE PART No	IDENTIFICATION CODES AND INSTALLATION NOTES
C51A	.002			P888-002		PTE6D2	GP2-333-202		Vert. Integrator Net.
B	.005		◆PB-20150	P888-005	◆PC-100	PTE6D5	GP2-333-502	410C1	Vert. Integrator Net.
C	.003			P888-005		PTE6D5	GP2-333-502		Vert. Integrator Net.
C52	4700	500	PE194-163	1464-005		IDR5D5		MS-25	Vert. Osc. Grid
C53	.001	600	PE194-145	P888-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Vert. Discharge *
C54	.05	600	PE194-160	P888-05	DF-503	PTE6S5		6TM-S5	Vert. Discharge
C55	.05	600	PE194-160	P888-05	DF 503	PTE6S5		6TM-S5	Vert. Sweep Coupling
C56	.001	600	PE194-145	P888-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Horiz. Sync. Coupling
C57	.001	600	PE194-145	P888-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Horiz. Sync. Coupling
C58	.01	600	PP19106	P888-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Horiz. Feedback †
C59	.005	600	PE194-151	P888-005	D6 502	PTE6D5	GP2-333-502	6TM-D5	Horiz. Feedback
C60	.005	600	PE194-151	P888-005	D6 502	PTE6D5	GP2-333-502	6TM-D5	Horiz. Divider †
C61	.005	600	PE194-151	P888-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	AFC Filter
C62	.1	200	PE194-56	P288-1	DF-104	PTE4P1		2TM-P1	AFC Filter
C63	3900	500	PE190-261	1464-004		IDR5D4			Fixed Trimmer
C64	390	500	PE190-137	1469-0004		SR5T4		MS-34	Horiz. MV Feedback
C65	390	500	PE190-137	1469-0004		SR5T4		MS-34	Horiz. Discharge
C66	270	500	PE190-133	1468-0003	D6-271	SW5T3	GP2K-271	MS-33	Horiz. Sweep Coupling
C67	10	2500	PP19145						Horiz. Feedback
C68	10	2500	PP19145						Horiz. Feedback
C69	.05	600	PE194-160	P888-05	DF-503	PTE6S5		6TM-S5	Horiz. Output Screen
C70	.1	600	PE194-163	P888-1	DF 104	PTE6P1		6TM-P1	Damper Filter
C71	.05	600	PE194-160	P888-05	DF-503	PTE6S5		6TM-S5	Damper Filter
C72	500	20000	PA19098-2	HV20-A	TVL-502				HV Filter
C73	.01	600	PP19106	P888-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Line Filter
C74	.01	600	PP19108	P888-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Line Filter
C75	1500		PA19148	BPD-0015	DD-152	SW5D15	801-0015	5HK-D15	RF Bypass *

* Not used in all models.
† Some models use .001MFD. in this application. (Part # PE194-145)
‡ Some models use .005MFD. in this application. (Part # PE194-151)
◆ Items C5A, C5B, C5C, R55A, R55B, R55C are combined in one unit in some models.
¶ Some models use .01MFD. in this application. (Part # PP19106)

CONTROLS

ITEM No	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIR KING PART No	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	500Ω	½	PA24124				Contrast Control
B	250KΩ						Volume Control and Switch
R2A	3000Ω	½	PA24114	Q11-112	AM-15-5	AN-7	Vertical Linearity Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R2A per instructions
R3A	5Meg	½	PA2411	Q11-141	AG-85-5	AN-87	Height Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R3A per instructions
R4A	1Meg	½	PA24112	Q11-137	AG-61-5	AN-69	Vertical Hold Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R4A per instructions
R5A	100KΩ	½	PA24110	Q11-128	AG-41-5	AN-40	Brightness Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R5A per instructions
R6	100Ω	2	PA24116	W-100	43-100	VK-121	Horiz. Centering Control - Wire Wound
R7	2500Ω	4	PA24113		RTV-183	SVP-2588	Focus Control - Wire Wound
R8	20Ω	2	PA24118	W-20X10	RTV-3	SVT-901	Vertical Centering Control - Wire Wound

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R9	4700Ω			BTS-4700	Antenna Coil Shunt - See Note 1
R10	2200Ω	20%		BTS-2200	RF Amp. Grid
R11	47Ω				RF Amp. Cathode - See Note 1
R12	2200Ω	20%		BTS-2200	RF Amp. Decoupling
R13	15KΩ	20%		BTS-15K	Osc. Grid - See Note 2
R14	4700Ω	5%			Osc. Plate
R15	220KΩ	20%		BTS-220K	Mixer Grid
R16	15KΩ	20%		BTS-15K	Mixer Plate
R17	2.2Meg			BTS-2.2Meg	AGC Network - See Note 3
R18	5600Ω		PE231-1167	BTS-5600	1st. Video IF Amp. Grid
R19	39Ω		PE231-1115		1st. Video IF Amp. Cathode
R20	330Ω	20%	PE231-1137	BTS-330	AGC Network
R21	82Ω	20%	PE231-1123	BTS-82	Decoupling
R22	22KΩ		PE231-1181		2nd. Video IF Amp. Grid
R23	82Ω		PE231-1123	BTS-82	2nd. Video IF Amp. Cathode
R24	820Ω		PE232-1171	BTA-8200	2nd. Video IF Amp. Plate
R25	82Ω	20%	PE231-1123	BTS-82	Decoupling
R26	82Ω	20%	PE231-1123	BTS-82	3rd. Video IF Amp. Cathode
R27	82Ω	20%	PE231-1123	BTS-82	Decoupling
R28	1Meg		PE231-1221	BTS-1Meg	AGC Network
R29	82Ω	20%	PE231-1123		Parasitic Suppressor
R30	4700Ω		PE231-1165	BTS-4700	Video Amp. Grid
R31	1.2Meg			BTS-1.2Meg	Video Amp. Grid - See Note 9
R32	560Ω		PE231-1143	BTS-560	Video Amp. Cathode
R33	150Ω			BTS-150	Video Amp. Cathode - See Note 4
R34	4700Ω		PE231-1165	BTS-4700	Peaking Coil Shunt
R35	2200Ω	1	PE232-1156	BTA-2200	Video Amp. Plate
R36	4700Ω	2	PE233-1165	BTB-4700	Video Amp. Plate
R37	180KΩ		PE231-1203	BTS-180K	DC Restorer Diode Load
R38	1800Ω		PE231-1155	BTS-1800	Picture Tube Grid
R39	270KΩ		PE231-1207	BTS-270K	Picture Tube Cathode
R40	2700Ω	20%	PE231-1159	BTS-2700	Picture Tube Cathode - See Note 5
R41	82KΩ	20%			Sound IF Amp. Grid - See Note 6
R42	100KΩ	20%	PE231-1197	BTS-100K	Sound IF Amp. Screen
R43	1800Ω	20%	PE231-115	BTS-1800	Sound IF Amp. Decoupling
R44	47KΩ		PE231-1189	BTS-47K	Ratio Detector Diode Load
R45	4.7Meg		PE231-1237	BTS-4.7Meg	AF Amp. Grid
R45	470KΩ		PE231-1213	BTS-470K	AF Amp. Plate
R47	470KΩ	½	PE231-1213	BTS-470K	Output Grid
R48	330Ω	1	PE232-1137	BTA-330	Output Cathode
R49	3250Ω	10	PA2111		Decoupling - Wire Wound
R50	1Meg	½	PE231-1221	BTS-1Meg	Sync. Clipper Plate
R51	3300Ω	1	PE231-1181	BTA-3300	Sync. Phase Inverter Cathode

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R52	8200Ω	½	PE231-1171	BTS-8200	Sync. Phase Inverter Plate
R53	3900Ω	½	PE231-1163	BTS-3900	Sync. Phase Inverter Plate
R54	27KΩ	½	PE231-1183	BTS-27K	Voltage Divider
R55A	22KΩ	½		BTS-22K	Integrator
B	22KΩ		◆PB-20150	BTS-22K	Integrator
C	8200Ω			BTS-8200	Integrator
R58	1.5Meg	½	PE231-1235	BTS-1.5Meg	Vertical Osc. Grid
R57	470KΩ	½	PE231-1213	BTS-470K	Vertical Osc. Plate
R58	33KΩ	½	PE231-1189	BTS-33K	Voltage Divider - See Note 7
R59	3900Ω	½	PE231-1163	BTS-3900	Vertical Peaking
R60	1.5Meg	½	PE231-1235	BTS-1.5Meg	Vertical Amp. Grid
R61	1000Ω	20% ½	PE231-1249	BTS-1000	Vertical Amp. Cathode
R62	47KΩ	1	PE232-1189	BTA-47K	Vertical Amp. Decoupling
R63	150KΩ	1	PE232-1201	BTA-150K	Vertical Amp. Decoupling
R64	3300Ω	2	PE233-1181	BTB-3300	Vertical Amp. Decoupling
R65	3300Ω	2	PE233-1181	BTB-3300	Voltage Divider
R66	100KΩ	½	PE231-1197	BTS-100K	Horiz. Phase Detector Diode Load
R67	100KΩ	½	PE231-1197	BTS-100K	Horiz. Phase Detector Diode Load
R68	3.3Meg	½	PE231-1233	BTS-3.3Meg	Horiz. Phase Detector Diode Load
R69	2700Ω	½	PE231-1159	BTS-2700	Horiz. Feedback Network
R70	4700Ω	½	PE231-1165	BTS-4700	Horiz. Feedback Network - See Note 8
R71	470KΩ	½	PE231-1213	BTS-470K	AFC Filter
R72	100KΩ	20% ½	PE231-1197	BTS-100K	Horiz. MV Grid
R73	2700Ω	½	PE231-1159	BTS-2700	Horiz. MV Cathode
R74	3900Ω	½	PE231-1163	BTS-3900	Horiz. MV Plate
R75	270KΩ	½	PE231-1207	BTS-270K	Horiz. MV Plate
R76	82Ω	20% ½	PE231-1123		Parasitic Suppressor
R77	470KΩ	½	PE231-1213	BTS-470K	Horiz. Output Grid
R78	150Ω	2	PE233-1129		Horiz. Output Cathode
R79	4700Ω	2	PE233-1165	BTB-4700	Voltage Divider
R80	4700Ω	2	PE233-1165	BTB-4700	Voltage Divider
R81	82Ω	20% ½	PE231-1123	BTS-82	Focus Coil Shunt
R82	2500Ω	15	PA2111O	3D-2500	Filter - Wire Wound
R83	1.2Ω	1	PE23151	BW-1-1.2	Discr. Filament - Wire Wound
R84	60Ω	10	PP22107		Surge Limiter - Wire Wound

◆ Items R55A, R55B, R55C, C5I A, C51B, C5IC are combined in one unit in some models.

Note 1 Not used in all models.
Note 2 Some models use 22KΩ resistor in this application.
Note 3 Some models use 3.3Meg resistor in this application.
Note 4 Some models use 120Ω resistor in this application.
Note 5 Some models use 8200Ω resistor in this application.
Note 6 Some models use 100KΩ resistor in this application.
Note 7 Some models use 47KΩ resistor in this application.
Note 8 Some models use resistors in parallel to obtain desired value.
Note 9 Some models use 1Meg resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC ① 1.9A	680VCT .330ADC	5VAC @ 3A	6 3VAC @ 1.2A SEC. 4 6.3VAC @ 9A	PC-10109		P-3069	

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	NOTES
T2	160Ω	940Ω	PB-10125	A-8111 ①	A-3900 ①	TBO-1 ①	Vert. Block Osc. Trans.
T3	420Ω	1Ω	A-10108	A-8130	HVO-7		Horiz. Output Trans.
	Tap 72Ω	Taps .5Ω & 7.5Ω					
T4	1.1KΩ	7Ω	PB-10115-2	A-8112 ①	A-3036 ①	TSO-5 ①	Vert. Output Trans.
T5A	13Ω		PB-28278-3	DY-8	MDF-70		Horiz. Deflection Coils
B	60Ω						Vert. Deflection Coils
T6	1KΩ		PB-28282				Focus Coil

① Drill one new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
T7	4.2KΩ	3.5Ω	480Ω	1Ω	PB-28286	A-3877	A-2930	RO-9 ①	① Drill one new mounting hole.

PARTS LIST CONTINUED ON PAGE 15

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	AIR KING PART No.	VIKING PART No.	QUAM PART No.	
SP1A	PM	3.5Ω		5J4	5A1	
B	PM	3.5Ω		8J9	8A31	
C	PM	3.5Ω		12J12	12A4A	
	CONE DIA.	V. C. DIA.				
SP2A	5"	9/16"				
B	8"	1"				
C	10"	1"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ↺)	AIR KING PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.220A	61Ω	1.7Henries	PB-1406	C-2326 ①	C-2991 ①	TR-3300 ① ①	Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	AIR KING PART No.	IRC PART No.	
L2	Ant. Coil	0Ω	0Ω	A28280-15		Low Band
L3	Ant. Coil	0Ω	0Ω	A28280-14		High Band
L4	RF Coil	0Ω				
L5	Mixer, Grid Coil	0Ω				
L6	Osc. Coil	0Ω		A28280-3		
L7	Osc. Coil	0Ω				
L8	Fil. Choke			A28280-13		
L9	1st. Video IF	.4Ω		A28280-19		Not used in all models
L10	2nd. Video IF	.2Ω		PB3392		
L11	Fil. Choke	.2Ω		PA28276	CL-1	.82 Microhenry
L12	3rd. Video IF	.2Ω		PB3392		
L13	Fil. Choke	.2Ω		PA28276	CL-1	.82 Microhenry
L14	4th. Video IF	.2Ω		PB3392		
L15	RF Choke	2.7Ω		PA28253		
L16	Peaking	6.4Ω		PA28255-2		White Dot
L17	Peaking	5Ω		PA28255-1		Red Dot
L18	Peaking	6.4Ω		PA28255-2		White Dot
L19	Peaking	5Ω		PA28255-1		Red Dot
L20	Peaking	5Ω		PA28255-1		Red Dot
L21	Peaking	10Ω		PA28255-4		Green Dot
L22	Sound IF	1.8Ω		PA28286		
L23	Radio Det. Trans.	4Ω	1.5Ω	PB1201/1202		Tap 1.5Ω
L24	Horiz. Osc.	65Ω		PA28263		
L25	Width Coil	.9Ω		PA28279		
L26	Horiz. Lin.	30Ω		PA28292		

MISCELLANEOUS

ITEM No.	PART NAME	AIR KING PART No.	NOTES
M1A	RF Tuner	PC54946	
B	RF Tuner	PC54805	Alternate
C	RF Tuner	PC54973	Alternate
M2	Ion Trap	PA54794	
B2	Trimmer	PA1772	25-280MMF. (Horiz. Drive)
	Knob	PC39209-2	Channel Selector (Models 17T1, 17M1, 17C2, 17C7, 20C1, 20C2, 20K1 and 20M1)
	Knob	PC39209-3	Channel Selector (Models 17C5 and 17K1)
	Knob	PC39212-2	Channel Selector Vernier (Models 17T1, 17M1, 17C2, 17C7, 17C5, 17K1, 20C1, 20C2, and 20K1, and 20M1)
	Knob	PC39211-2	Off/On Volume (Models 17T1, 17M1, 17C2, 17C7, 17K1, 19C1, 20C1, 20C2, 20K1 and 20M1)
	Knob	PC39211-3	Off/On Volume (Model 17C5)
	Knob	PC39213-2	Contrast (Models 17T1, 17M1, 17C2, 17C7, 17C5, 19C1, 20C1, 20C2, 20K1 and 20M1)
	Knob	PC39213-3	Contrast (Model 17K1)

AIRLINE
MODEL 05GCD-3658A

AIRLINE
MODEL 05GCD-3658A

TRADE NAME	Airline, Model 05GCD-3658A
SUPPLIER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Illinois
TYPE SET	AC Operated Wire Recorder with Audio Amplifier
TUBES (FIVE)	Types 6SF5 Pre-Amp., 6SF5 1st. AF Amp., 6J5 2nd. AF Amp., 6V6GT Power Output, 6X5GT Rectifier
POWER SUPPLY	105-125 Volts AC RATING .95 Amp. at 117 Volts AC

FOR SERVICE INFORMATION ON RECORDER SEE CRESCENT MODEL M-2000 SERIES PHOTOFACT SET 120 FOLDER 4.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

AIRLINE
MODEL 05GCD-3658A

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RTMA BASE TYPE	INSTALLATION NOTES
		AIRLINE PART No.	STANDARD REPLACEMENT		
V1	Pre-Amplifier	6SF5	6SF5	6AB	
V2	1st. AF Amplifier	6SF5	6SF5	6AB	
V3	2nd. AF Amplifier	6J5	6J5	6Q	
V4	Power Output	6V6GT	6V6GT	7AC	
V5	Rectifier	6X5GT	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	AIRLINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	60	350	12W101	AFH2-60		UPT6245			▪ Filter
B	20	300							▲ Filter
C2A	20	300	12W110	AFH3-97		UP2035C		TVL-2555	▲ Decoupling
B	25	25				BR252A		TVA-1205	■ Output Cathode
C	25	25							2nd. AF Amp. Cathode
C3	25	25	12W102	PRS25/25		BR252A		TVA-1205	Pre-Amp. Cathode
C4	200	500	8W103	1468-0002	D6-201	5W5T2	GP2K-201	1FM-32	Tone Comp.
C5	50		12W115	SI50	D6-500	5W5-5	GP1K-500	5GA-5	Tone Comp.
C6	.01	400	12W105	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C7	.01	400	12W105	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C8	.1	400	12W106	P488-1	DF-104	PTE4P1		4TM-P1	Audio Coupling
C9	.01	400	12W105	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Audio Coupling
C10	.05	400	12W104	P488-05	DF-503	PTE4S5		4TM-S5	Tone Comp.
C11	.02	400	12W107	P488-02	DF-203	PTE4S2		4TM-S2	Audio Output Plate
C12	.01	400	12W105	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Osc. Grid Cap.
C13	.001	400	12W114	P688-001	D6-103	PTE6D1	GP2L-102	6TM-D1	Tone Comp.
C14	.02	200	12W107	P488-02	DF-203	PTE4S2		2TM-S2	Tone Comp.
C15	10000	500		1467-01	D6-103	1D3S1	GP2-333-103	1FM-11	Fixed Trimmer
C16	.01	400	12W105	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Line Filter
C17	.01	400	12W105	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Line Filter

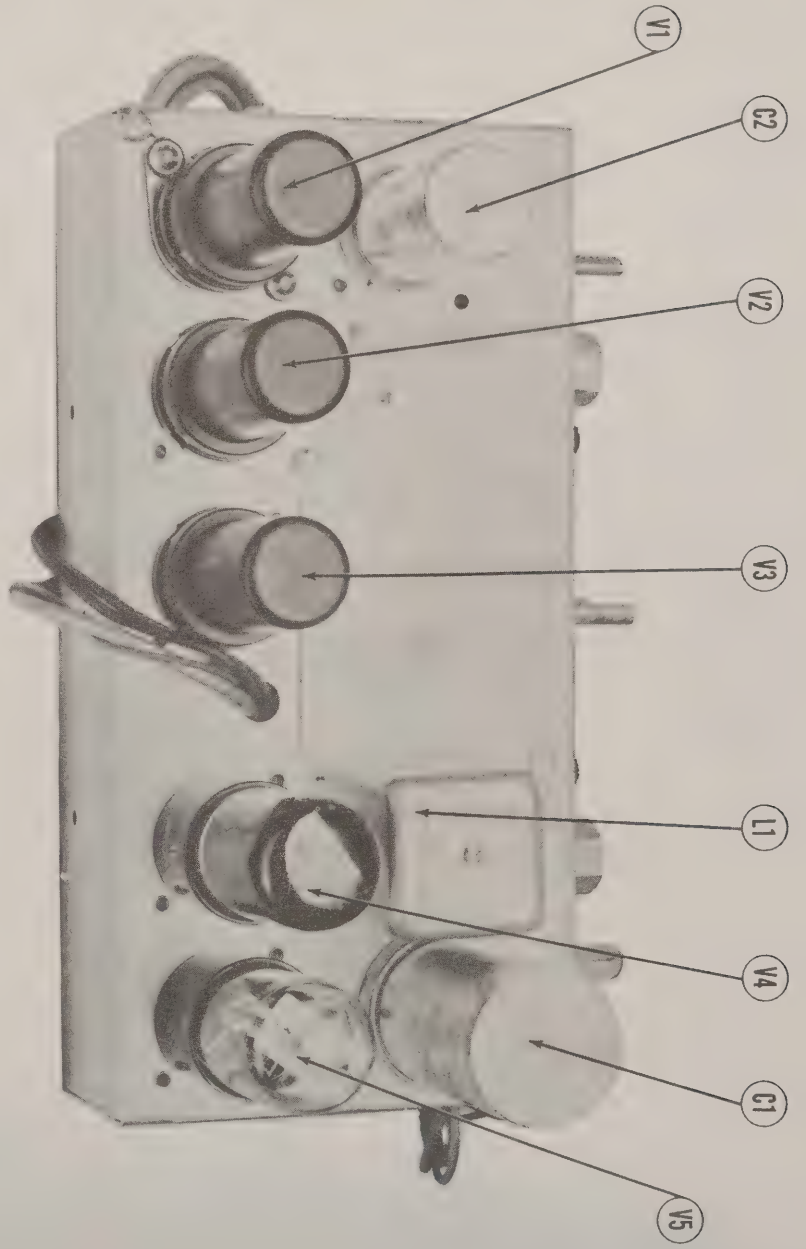
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESIST-ANCE	WATTS	AIRLINE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	500KΩ	½	11W203	Q11-133	AG-58-S	B-59-S	Volume Control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R1A per instructions
C	Switch		Not req.	76-1	SWB	Not req.	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	AIRLINE PART No.	IRC PART No.	
R2	100KΩ	½	11W102-8	BTS-100K	Pre-Amp. Grid
R3	1500Ω	½	11W102-1	BTS-1500	Pre-Amp. Cathode
R4	100KΩ	½	11W102-8	BTS-100K	Pre-Amp. Plate
R5	1500Ω	½	11W102-1	BTS-1500	1st. AF Amp. Cathode
R6	100KΩ	½	11W102-8	BTS-100K	1st. AF Amp. Plate
R7	56KΩ	½	11W102-9	BTS-56K	Decoupling
R8	330KΩ	½	11W102-20	BTS-330K	Tone Compensation
R9	560KΩ	½	11W102-7	BTS-560K	2nd. AF Amp. Grid
R10	1200Ω	½	11W102-2	BTS-1200	2nd. AF Amp. Cathode
R11	27KΩ	1	11W105-2	BTA-27K	2nd. AF Amp. Plate
R12	200Ω	½			Parasitic Suppressor - See Note 1
R13	47KΩ	½	11W102-11	BTS-47K	Output Grid
R14	270Ω	1		BTA-270	Output Cathode - See Note 2
R15	6800Ω	1	11W105-3	BTA-6800	Osc. Coil Shunt
R16	200Ω	½			Parasitic Suppressor - See Note 1
R17	1Meg	½	11W102-5	BTS-1Meg	Series Neon
R18	220KΩ	½	11W102-13	BTS-220K	Voltage Divider

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	AIRLINE PART No.	IRC PART No.	
R19	560KΩ	½	11W102-7	BTS-560K	Voltage Divider
R20	2700Ω	½	11W102-16	BTS-2700	Tone Compensation
R21	82KΩ	½	11W102-24	BTS-82K	Voltage Divider
R22	15KΩ	½	11W102-25	BTS-15K	Tone Compensation
R23	56KΩ	½	11W102-9	BTS-56K	Tone Compensation
R24	1Meg	½	11W102-5	BTS-1Meg	Tone Compensation
R25	1000Ω	10	11W103-1	1 3/4A-1000	Filter
R26	100KΩ	2	11W104-1	BTB-100K	Bleeder

Note 1 Some models use 150Ω resistor in this application.
Note 2 Some models use 220Ω resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC .95A	500VCT .050A	6.3VCT ⓐ 2A		13W103-2		P-3048	

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	4.7KΩ	3Ω	380Ω	.6Ω	50E1	A-3877①	A-3019	RO-9 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			AIRLINE PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V. C. IMP.	7W234	ST803 Model P525-V	52A1	
	PM	3Ω				
SP2	CONE DIA.	V. C. DIA.				
	5 1/4"	9/16"				

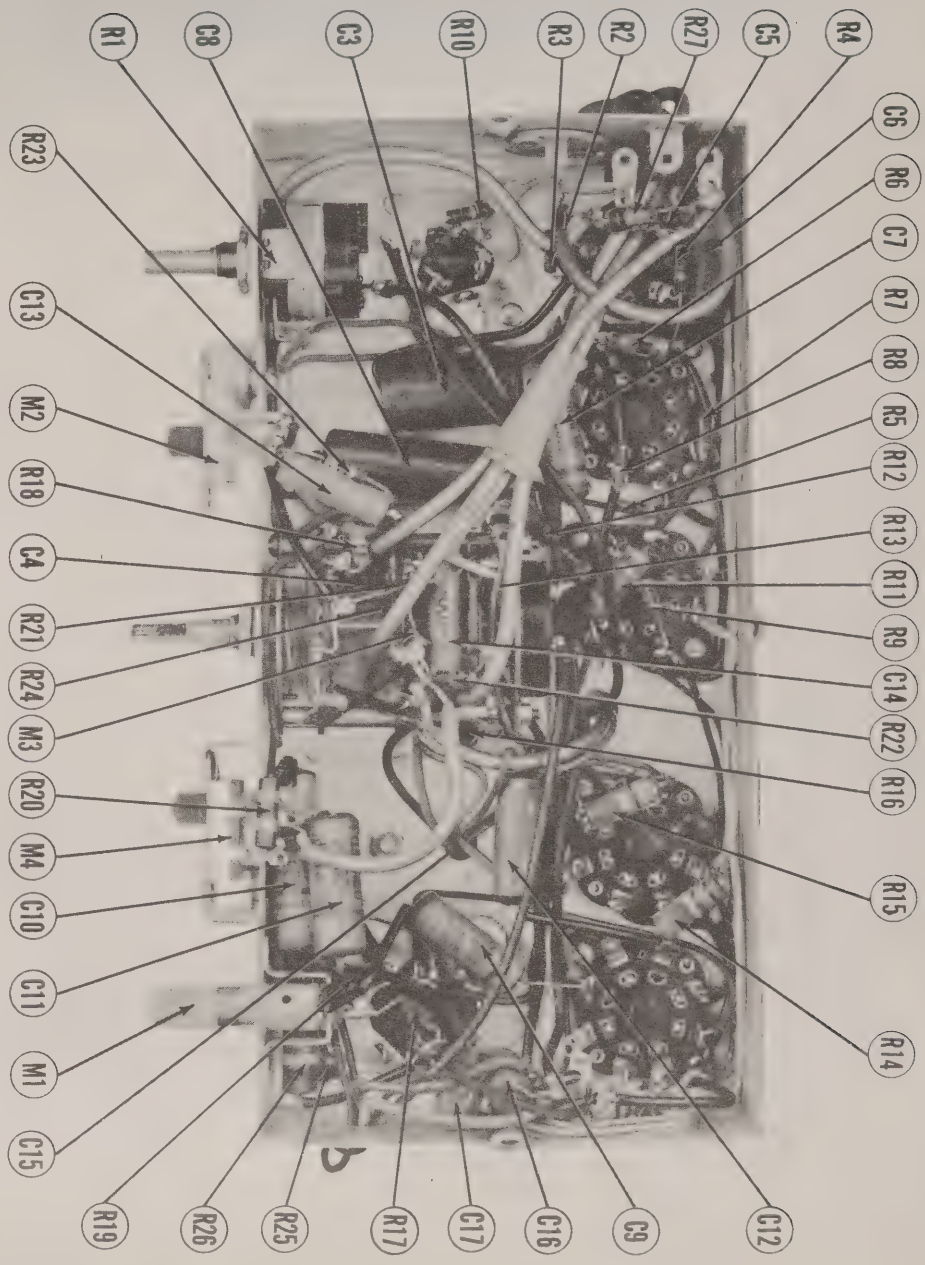
R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	AIRLINE PART No.		
L1	30KC Osc. Coil	9Ω	.1Ω	13W101		Tap 1.9Ω

MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M1	Neon Bulb		Type NE51
M2	Switch	7W118	Tone
M3	Switch	7W117	Function
M4	Switch	7W122	Ext.-Int. Amp.
	Knob	3W208	
	Cabinet	7W235	

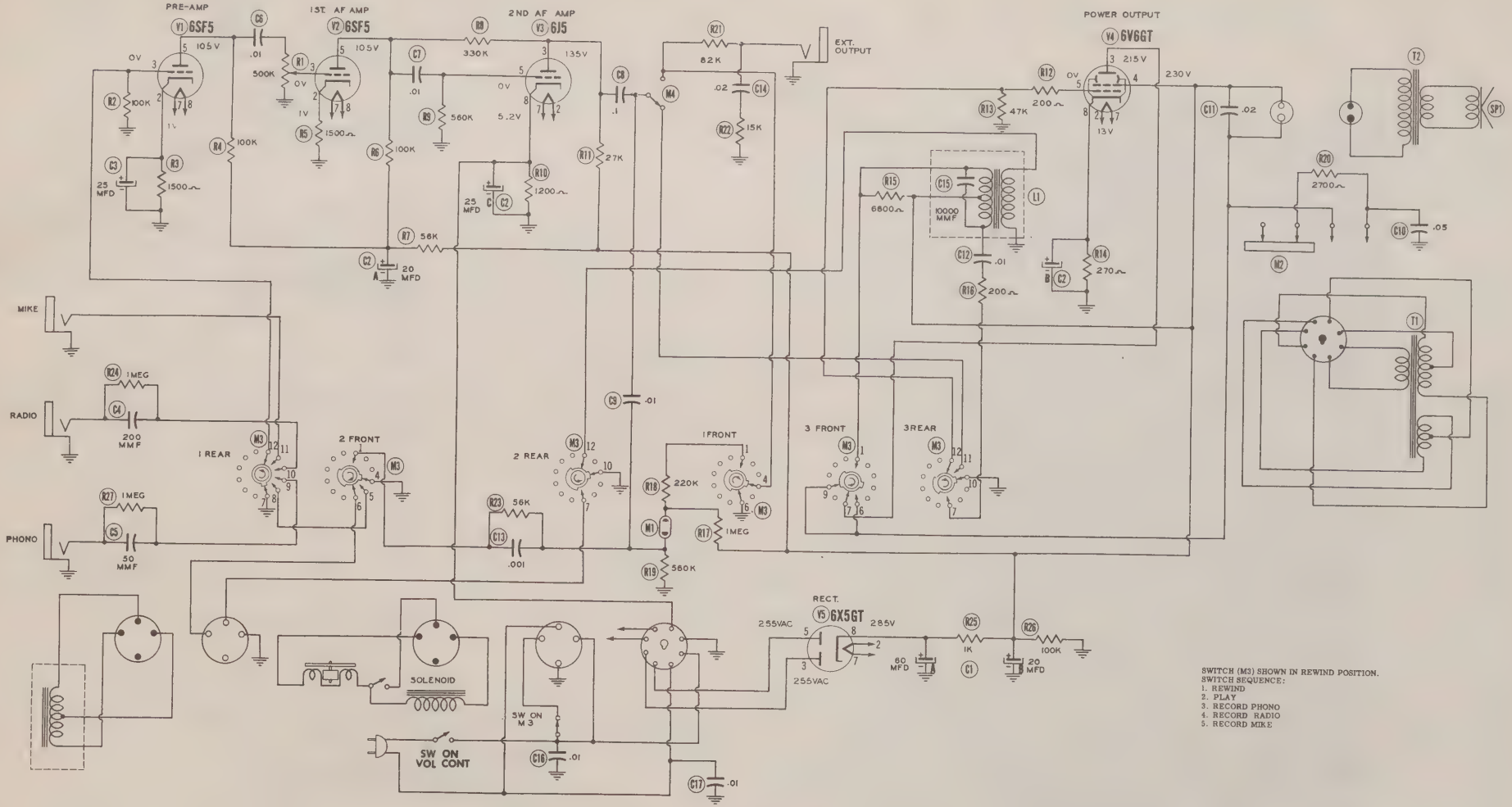
CHASSIS—BOTTOM VIEW



SET 151 FOLDER 3

AIRLINE MODEL 05GCD-3658A

AIRLINE MODEL 05GCD-3658A



SWITCH (M3) SHOWN IN REWIND POSITION.
SWITCH SEQUENCE:
1. REWIND
2. PLAY
3. RECORD PHONO
4. RECORD RADIO
5. RECORD MIKE

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SF5	0Ω	1.5KΩ	100KΩ	Inf.	†167KΩ	Inf.	¶0Ω	¶.2Ω
V 2	6SF5	0Ω	1.5KΩ	0Ω	500KΩ	†110KΩ	†57KΩ	¶0Ω	¶.2Ω
V 3	6J5	0Ω	¶.2Ω	†28KΩ	47KΩ	560KΩ	†1KΩ	¶0Ω	1.2KΩ
V 4	6V6GT	0Ω	*.2Ω	†1.4KΩ	†1KΩ	47KΩ	†1KΩ	¶0Ω	270Ω
V 5	6X5GT	0Ω	¶.2Ω	150Ω	†28KΩ	160Ω	†1KΩ	¶0Ω	60KΩ

† MEASURED FROM PIN 8 OF V5
¶ MEASURED FROM PIN 7 OF V5
ALL MEASUREMENTS TAKEN IN "PLAY" POSITION

THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

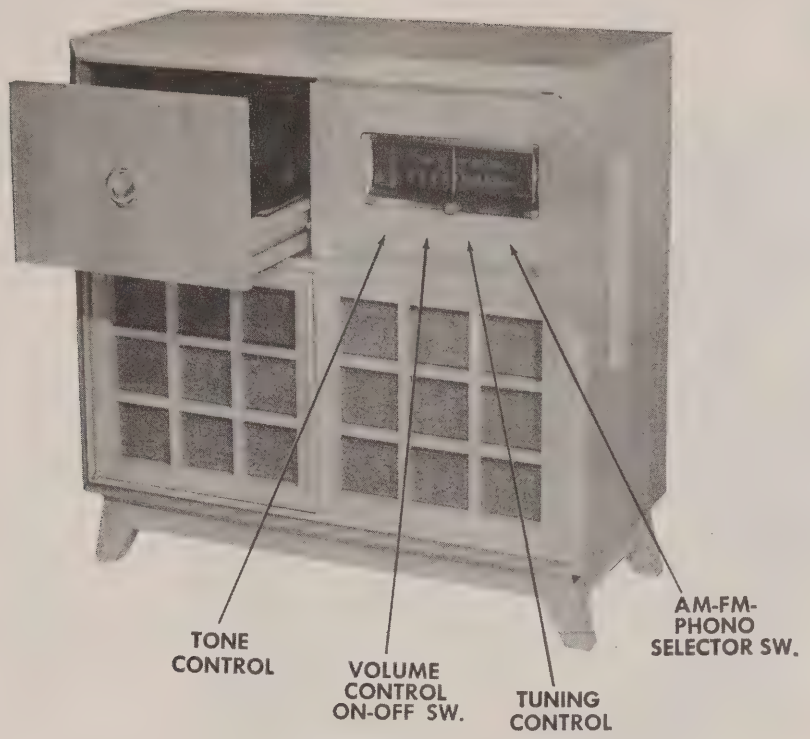
A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1951

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

AIRLINE MODELS 15WG-2749E, F, 15WG-2752D, E

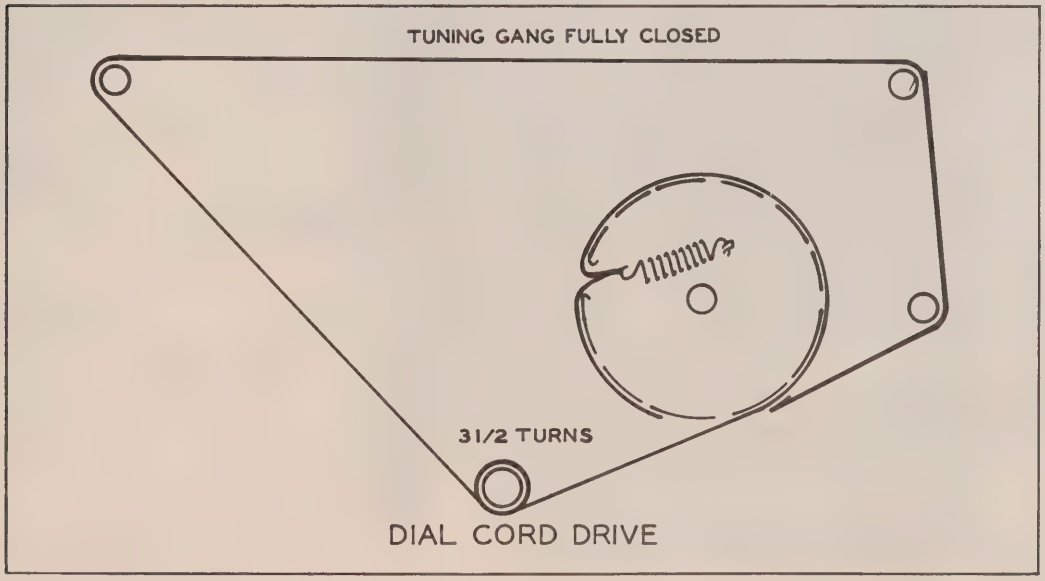
AIRLINE MODELS 15WG-2749E, F, 15WG-2752D, E



AIRLINE MODEL 15WG-2749F

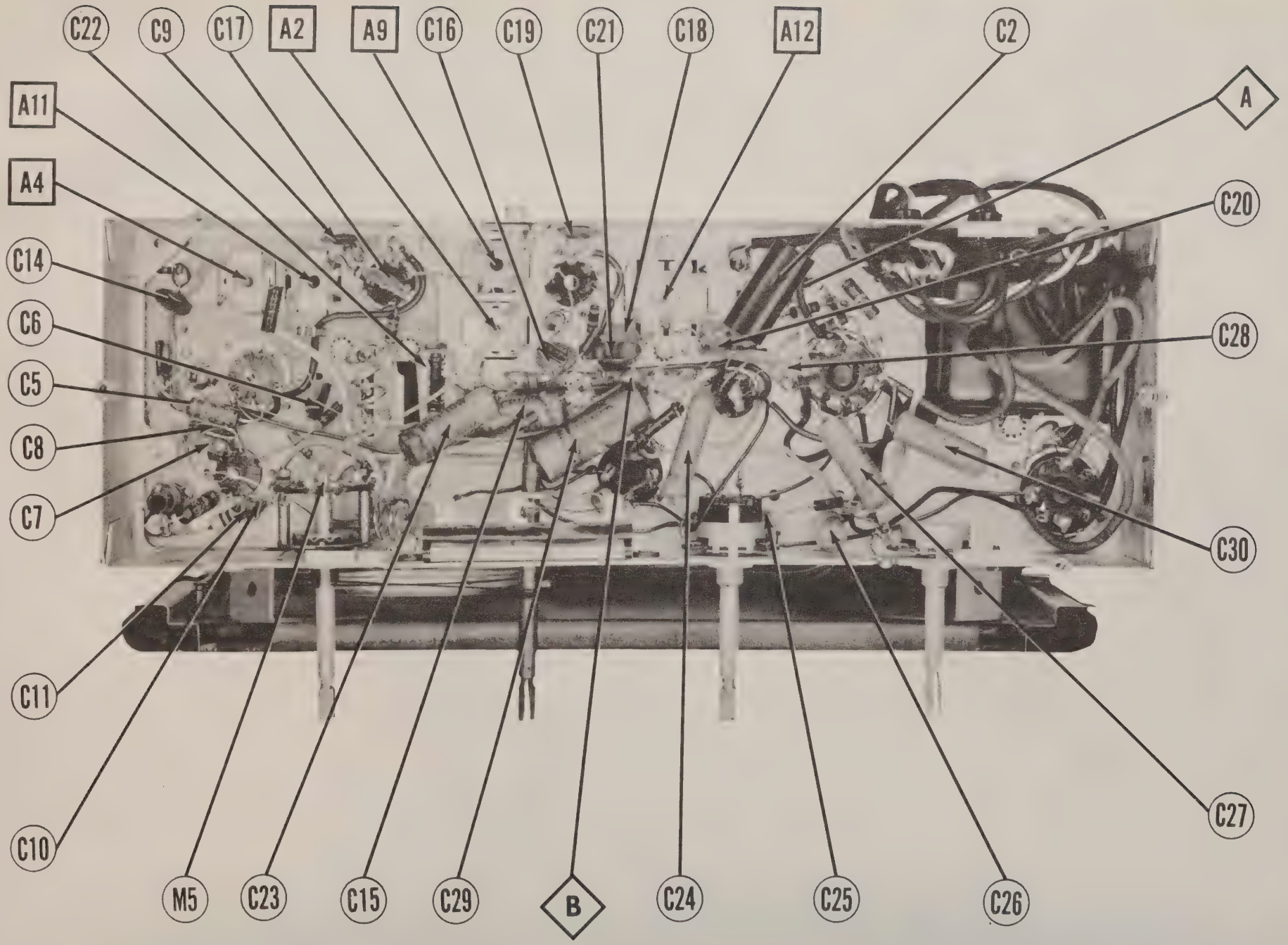
TRADE NAME	Airline, Models 15WG-2749E, F, 15WG-2752D, E
SUPPLIER	Montgomery Ward & Co., 619 Chicago Ave., Chicago, Illinois
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver with Loop Antenna
TUBES (EIGHT)	Types 12AT7 FM RF - Mixer, 6BE6 FM Osc. -AM Conv., 6BA6 1st. IF Amp., 6BA6 2nd. FM IF Amp., 6AL5 Ratio Det., 6AV6 AM DET.-AVC-AF, 6V6GT Power Output, 5Y3GT Rectifier
POWER SUPPLY	105-125 Volts AC — RATING .575 Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC — FREQ. MOD. 88-108MC

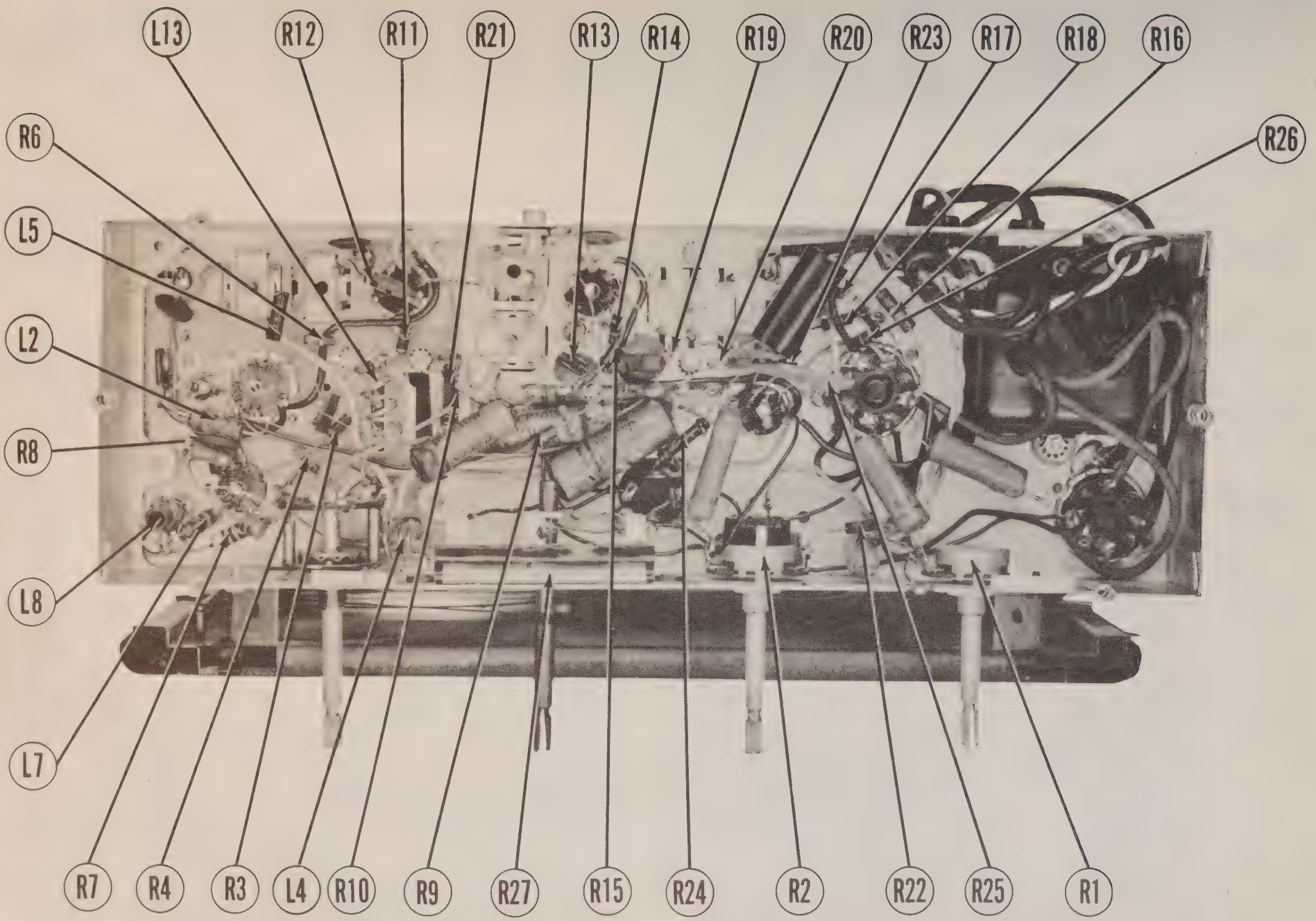
FOR SERVICE INFORMATION ON RECORD CHANGER IN MODELS 15WG-2749F AND 15WG-2752E SEE VM MODEL 950 IN PHOTOFACT SET 107 FOLDER 13 OR RECORD CHANGER MANUAL CM-3.

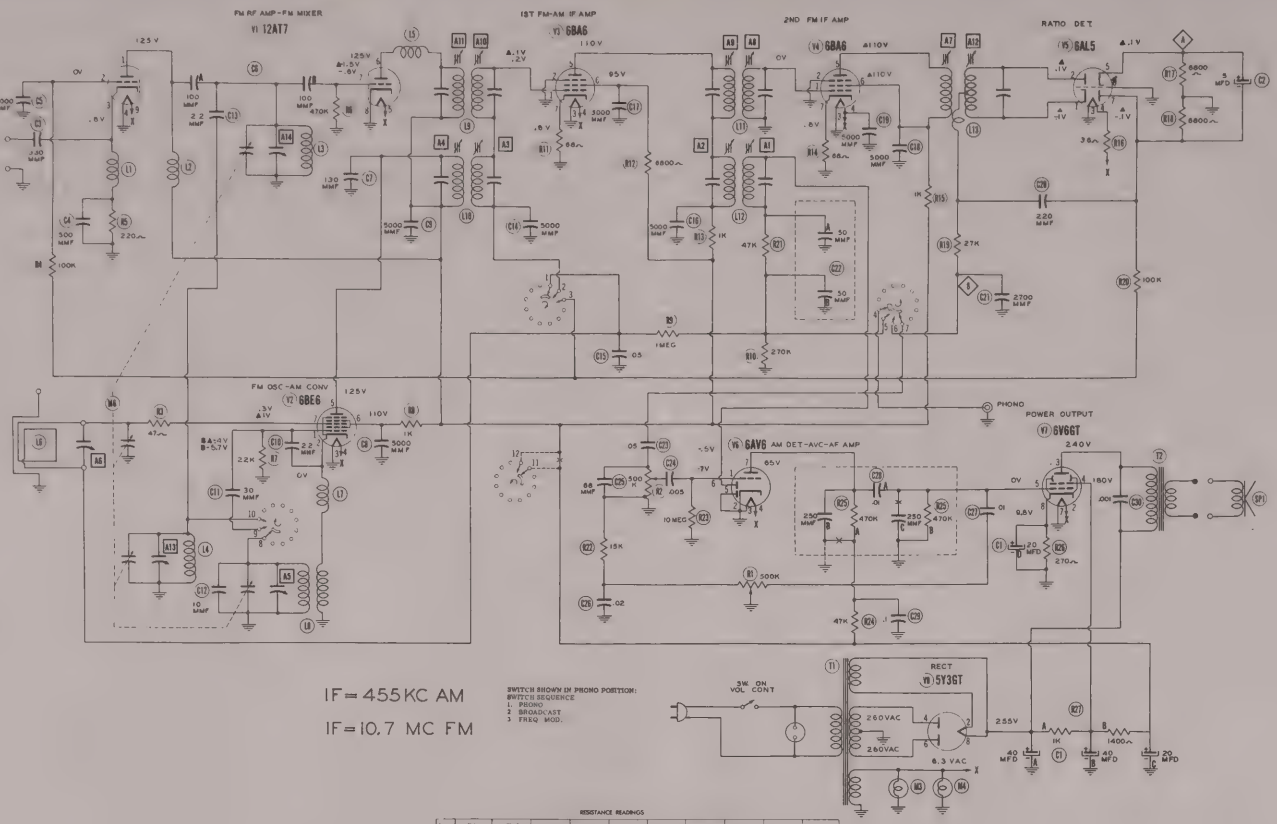


HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America


C22
C9
C17
A2
A9
C16
C19
C21
C18
A12
C2
A
A11
A4
C20
C14
C6
C28
C5
C8
C7
C30
C11
C27
C10
M5
C23
C15
C29
B
C24
C25
C26


L13
R12
R11
R21
R13
R14
R19
R20
R23
R17
R18
R16
R6
R26
L5
L2
R8
L8
L7
R7
R4
R3
L4
R10
R9
R27
R15
R24
R2
R22
R25
R1



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	12AT7 †	13.4KΩ	300KΩ	320Ω	0Ω	0Ω	12.4KΩ	470KΩ	0Ω	0Ω
V 2	6BE6	22MΩ (100KΩ)	20	0Ω	0Ω	0Ω	12.4KΩ	13.4KΩ	1.2MΩ	
V 3	6BA6	1.2MΩ	0Ω	0Ω	0Ω	0Ω	12.4KΩ	13.3KΩ	68Ω	
V 4	6BA6 †	1.3Ω	0Ω	0Ω	0Ω	0Ω	13.4KΩ	13.4KΩ	68Ω	
V 5	6AL5 †	Inf.	Inf.	0Ω	1.8Ω	6.8KΩ	0Ω		6.8KΩ	
V 6	6AV6	22MΩ	0Ω	0Ω	0Ω	0Ω	215KΩ		1510KΩ	
V 7	6V6GT	Inf.	0Ω	1440KΩ	11.4KΩ	470KΩ	50Ω	0Ω	370Ω	
V 8	5Y3GT	Inf.	80KΩ	Inf.	90Ω	Inf.	100Ω	Inf.	80KΩ	

* TAKEN WITH VACUUM TUBE VOLTMETER
† MEASURED FROM PIN 8 OF V8
▲ MEASURED IN FM POSITION
ALL MEASUREMENTS TAKEN IN AM UNLESS OTHERWISE STATED

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1951

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIR LINE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	FM RF Amp.-FM Mixer	12AT7	12AT7	9A	
V2	FM Osc.-AM Conv.	6BE6	6BE6	7CH	
V3	1st. FM-AM IF Amp	6BA6	6BA6	7BK	
V4	2nd. FM IF Amp.	6BA6	6BA6	7BK	
V5	Ratio Detector	6AL5	6AL5	6BT	
V6	AM Det-AVC-AF	6AV6	6AV6	7BT	
V7	Power Output	6V6GT	6V6GT	7AC	
V8	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA: AIR LINE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	350	45X359	AFH4-52		UP44235C		TVL-4605	▪ Filter
B	40	350							■ Filter
C	20	350							▲ Filter
D	20	25							Power Output Cathode
C2	5	100	45X361	PRS150/4		BR415		TVA-1402	Stabilizing Cap.
C3	330	500	47X470	1469-00035	D6-331		GP2K-331	1FM-335	RF Coupling
C4	500		47X508	SI500	D6-501	5W5T5	GP2K-501	5GA-T5	RF Amp. Cathode
C5	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	RF Amp. Grid
C6A	100		76X4	SI100	D6-101	5W5T1	GP1K-101	5GA-T1	RF Coupling
B	100			SI100	D6-101	5W5T1	GP1K-101	5GA-T1	RF Coupling
C7	130		47X559		TCN-130		N750L-131		Fixed Trimmer
C8	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Osc. Anode
C9	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Conv. Plate
C10	2.2		47X557		TCZ-2.2		NP0K-2R2		Osc. Feedback
C11	30		47X558		TCN-30		N750K-300		Osc. Grid Cap.
C12	10			SI10NP0	TCZ-10		NP0K-100	5TCC-Q1	Fixed Trimmer
C13	2.2		47X557		TCZ-2.2		NP0K-2R2		Osc. Coupling
C14	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	AVC Filter
C15	.05	200	B66503	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C16	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st. IF Amp. Plate
C17	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st. IF Amp. Screen
C18	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	2nd. FM IF Amp. Dec.
C19	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	2nd. FM IF Amp. Fil.
C20	220	500	47X468	1469-00025	D6-221	5R5T25	GP2K-221	1FM-325	Diode Load Cap.
C21	2700		47X492	SI2700	D6-272	5R5D3	GP2-333-272	1FM-23	De-emphasis
C22A	50		47X112	SI50	D6-500	5W5Q5	GP1K-500	5GA-Q5	Diode RF Filter
B	50			SI50	D6-500	5W5Q5	GP1K-500	5GA-Q5	Diode RF Filter
C23	.05	200	B66503	P288-05	DF-503	PTE4S5		2TM-S5	Audio Coupling
C24	.005	400	D66502	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Coupling
C25	68	500	47X471	1469-00007	D6-680	5W5Q7	GP1K-680	MS-47	Tone Comp.
C26	.02	200	B66203	P488-02	DF-203	PTE4S2		2TM-S2	Tone Comp.
C27	.01	200	B66103	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Tone Comp.
C28A	.01	}							Audio Coupling
B	250	}	♦		♦PC-80				AF Amp. Plate
C		}							Power Output Grid
C29	.1	400	D66104	P488-1	DF-104	PTE4P1		4TM-P1	RF Bypass
C30	.001	800	H66102	P1088-001		PTE16D1		MB-D1	Power Output Plate

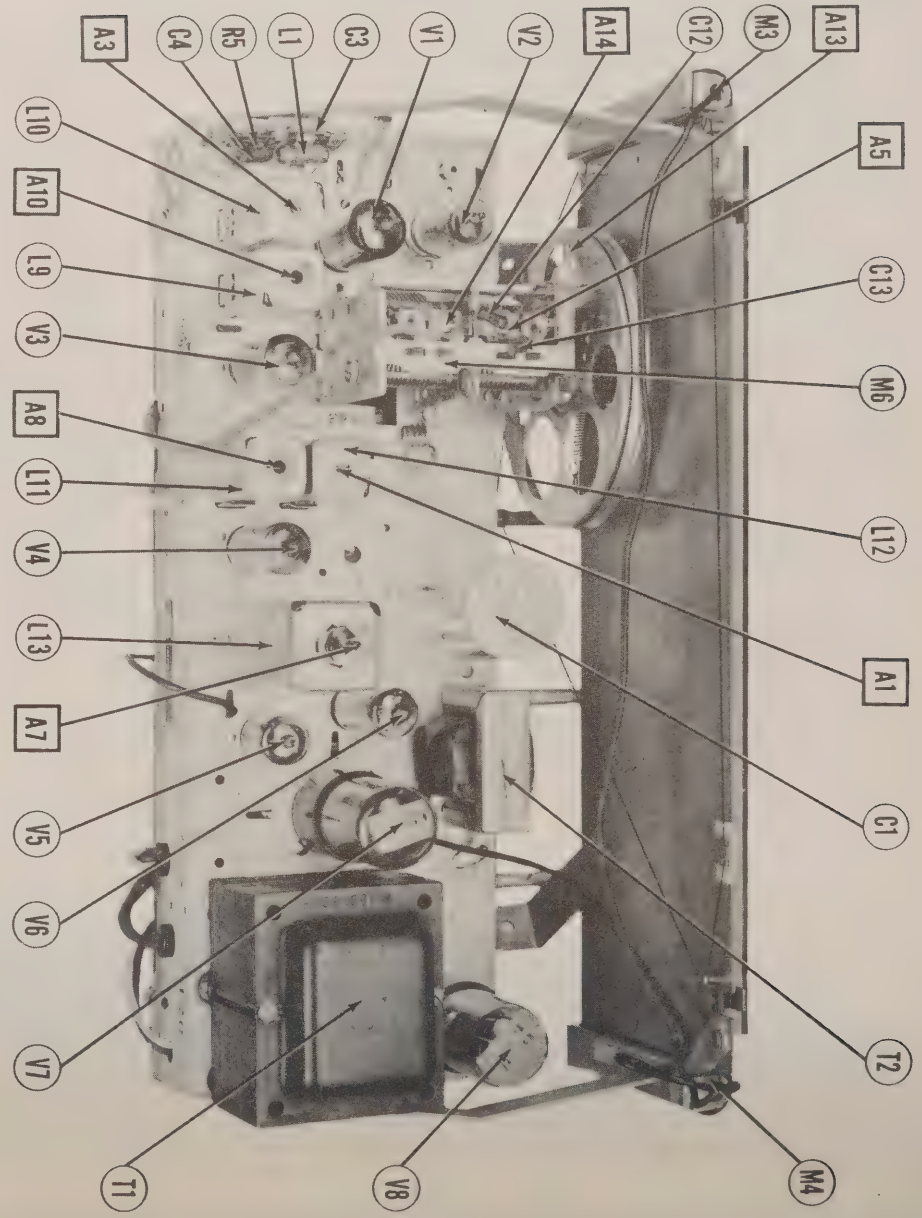
♦ Items C28A, C28B, C28C, R25A, R25B are combined in one unit.
When replacing separately, C28B, C28C should total 250MMF.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: AIR LINE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	40X311	Q13-133	AG-60-Z	BSK-60	Tone Control - See Note 1
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R1A per instructions
R2A	500KΩ	½	36X372	Q13-133X	AK-80	BTSK-66-S	Volume Control - Tapped at 100KΩ
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R2A per instructions
C	Switch		Not req.	76-1	SWB	Not req.	Attach to R2A per instructions

Note 1 Some models use 1Meg control in this application having Part # 40X341.

CHASSIS—TOP VIEW



SET 151 FOLDER 4

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	AIRLINE PART No.	IRC PART No.	
R3	47Ω	½	B85470		Parasitic Suppressor
R4	100KΩ	½	B85104	BTS-100K	FM RF Amp. Grid
R5	220Ω	½	B84221	BTS-220	FM RF Amp. Cathode
R6	470KΩ	½	B85474	BTS-470K	FM Mixer Grid
R7	22KΩ	½	B85223	BTS-22K	Osc. Grid
R8	1000Ω	½	B85102	BTS-1000	Osc. Anode
R9	1Meg	½	B85105	BTS-1Meg	AVC Network
R10	270KΩ	½	B85274	BTS-270K	AVC Network
R11	68Ω	½	B84680		1st. IF Amp. Cathode
R12	6800Ω	½	B84682	BTS-6800	1st. IF Amp. Screen
R13	1000Ω	½	B85102	BTS-1000	1st. IF Amp. Plate Decoupling
R14	68Ω	½	B84680		2nd. FM IF Amp. Cathode
R15	1000Ω	½	B85102	BTS-1000	2nd. FM IF Amp. Decoupling
R16	3.6Ω	½	43X233	BW-½-3.6	Ratio Det. Diode Filament - Wire Wound
R17	6800Ω	½	B84682	BTS-6800	Ratio Det. Diode Load
R18	6800Ω	½	B84682	BTS-6800	Ratio Det. Diode Load
R19	27KΩ	½	B85273	BTS-27K	De-emphasis
R20	100KΩ	½	B85104	BTS-100K	AVC Network
R21	47KΩ	½	B85473	BTS-47K	Diode Filter
R22	15KΩ	½	B85153	BTS-15K	Tone Compensation
R23	10Meg	½	B85106	BTS-10Meg	AF Amp. Grid
R24	47KΩ	½	B85473	BTS-47K	AF Amp. Decoupling
R25A	470KΩ	½	♦	BTS-470K	AF Amp. Plate
B	470KΩ	½		BTS-470K	Output Grid
R26	270Ω	½	B84271	BTS-270	Output Cathode
R27A	1000Ω	4	43X224		Filter - Wire Wound
B	1400Ω	6			Filter - Wire Wound

♦ Items R25A, R25B, C28A, C28B, and C28C are combined into one unit in some models.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ⓐ .575A	520VCT .085ADC	5VAC ⓐ 2A	6.3VAC ⓐ 2.5A	53X290			PH-70 ①

① Add series resistor to reduce plate voltage.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	5.6KΩ	3.2Ω	440Ω	.85Ω	51X134	A-3878 ②	A-2930 ②	RO-9 ②	② Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	V. C. IMP.	AIRLINE PART No.	VIKING PART No.	QUAM PART No.	
SP1	PM	3.2Ω	12A502	12J12	12A4A	
	CONE DIA.	V. C. DIA.				
SP2	11 3/8"	1"				

PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	AIRLINE PART No.	IRC PART No.	
L1	FM Ant. Choke	.2Ω		35A9	CLA	.47 Microhenry
L2	RF Choke	3Ω		35A8	CLA	3.3 Microhenries
L3	FM-Ant. Coil	0Ω		9A2066		
L4	FM Osc. Coil	0Ω		9A2067		
L5	Para. Supp.	0Ω		9A2103		
L6	AM Loop Ant.	1.3Ω	.1Ω	9A1972		
L7	Cathode Choke	1.8Ω		35A5	CLA	2.2 Microhenries
L8	AM Osc. Coil	.4Ω	5.1Ω	9A2065		
L9	1st. FM IF	.9Ω	.9Ω	9A2060		
L10	1st. AM IF	11Ω	13Ω	9A2062		
L11	2nd. FM IF	1.3Ω	1.3Ω	9A2061		
L12	2nd. AM IF	11Ω	13Ω	9A2063		
L13	Ratio Det. Trans.	1.2Ω	.1Ω	9A2161		Tap .3Ω

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA							REMARKS
	AIRLINE PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1		ACD-J	A-1 A-3	W22AB	A62A A65MG	96	O-1 or S-1 and O-3 or S-3	

ASTATIC, SHURE, AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA		REMARKS
	AIRLINE PART No.	WALCO PART No.	
M2		W-30MGS W-30A	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					AIRLINE PART No.		
M3	Bayonet	6-8	.15	Brown	7A103		Type # 47
M4	Bayonet	6-8	.15	Brown	7A103		Type # 47

MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M5	Switch	2A393	FM-AM-Phono
M6	2 Gang Var. Cap	14A209	(19-522MMF, 38-220MMF)
A6	Trimmer	17A235	AM Ant. Adj.
A13	Trimmer	17A255	FM Osc. Adj.
	Knob	10A735	Models 15WG-2749E, F
	Knob	10A754	Models 15WG-2752D, E
	Dial Pointer	15X251	

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD.	High side to pin 7, (Grid), of 6BE6, (V2) Low side to chassis.	455KC (400∿ Mod.)	AM (Center)	Tuning gang fully open.	Across, voice coil.	A1, A2, A3, A4	Adjust for maximum output.
2.	"	"	1620KC	"	"	"	A5	"
3.		Loop	1400KC	"	Tune for max. output.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	2500MMF	High side to pin 1, (Grid) of 6BA6, (V3) Low side to chassis.	10.7MC (unmod.)	FM (CW)	Tuning gang fully open.	DC probe to Point (A). Common to chassis.	A7, A8, A9	Adjust for maximum deflection.
5.	"	High side to pin 7, (Grid) of 6BE6, (V2). Low side to chassis.	"	"	"	"	A10, A11	"
6.	"	"	"	"	"	DC probe to Point (B). Common to chassis.	A12	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
4.	2500MMF	High side to pin 1, (Grid), of 6BA6, (V3) Low side to chassis.	10.7MC (450KC SWP)	FM (CW)	Point of non-interference	Vert. Amp. to Point (A). Low side to chassis.	A7, A8, A9	Disconnect stabilizer capacitor C2. Adjust for maximum amplitude and symmetry as per figure 1.
5.	"	High side to pin 7, (Grid), of 6BE6, (V2) Low side to chassis.	"	"	"	"	A10, A11	"
6.	"	"	"	"	"	Vert. Amp. to Point (B). Low side to chassis.	A12	Reconnect capacitor C2. Adjust A12 so 10.7MC occurs at center of crossover lines as per figure 2. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7.	300Ω carbon resistor	High side thru 300Ω to ungrounded FM ant. terminal.	108.5MC (unmod.)	FM	Tuning gang fully open.	DC probe to Point (A). Common to chassis.	A13	Adjust or maximum deflection.
8.	"	"	104.5MC	"	Tune for max. deflection.	"	A14	"

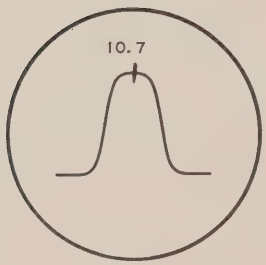


FIG. 1

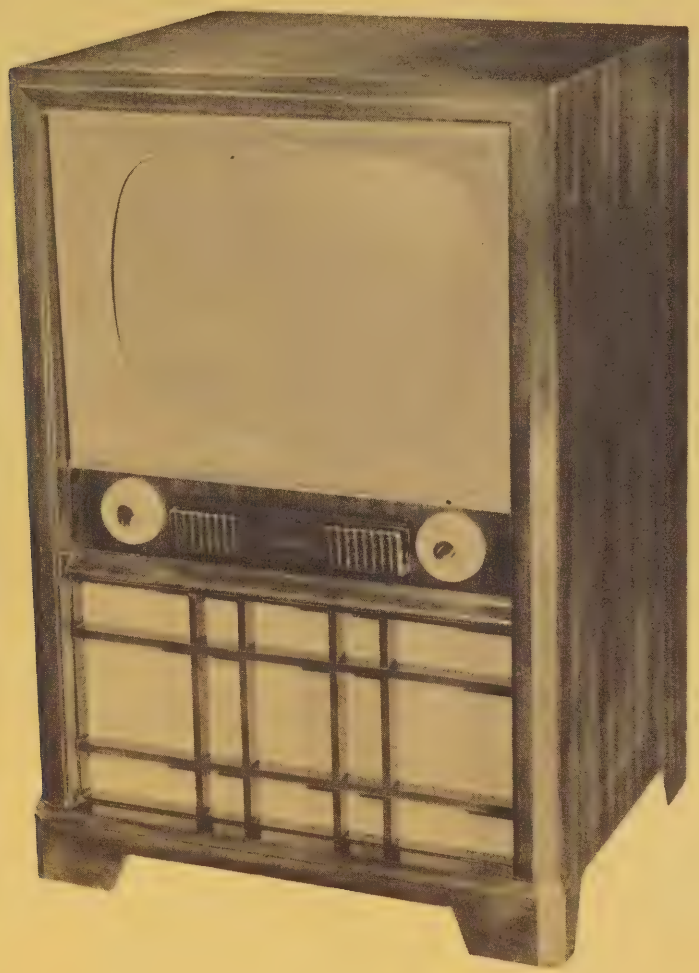
FIG. 2

ARVIN MODELS
5210, 5211, 5212 (Ch. TE315)

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.



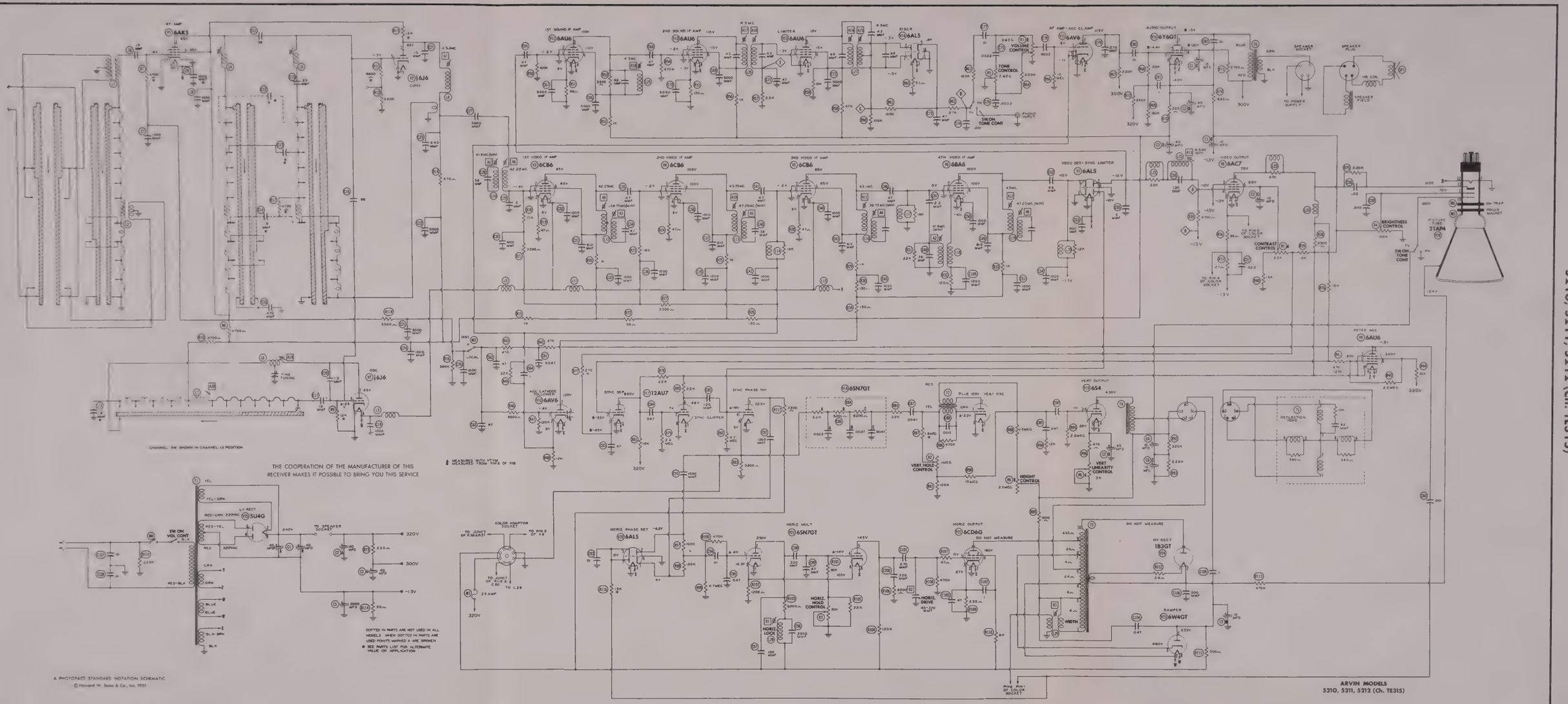
MODEL 5210CM

ARVIN MODELS
5210, 5211, 5212 (Ch. TE315)

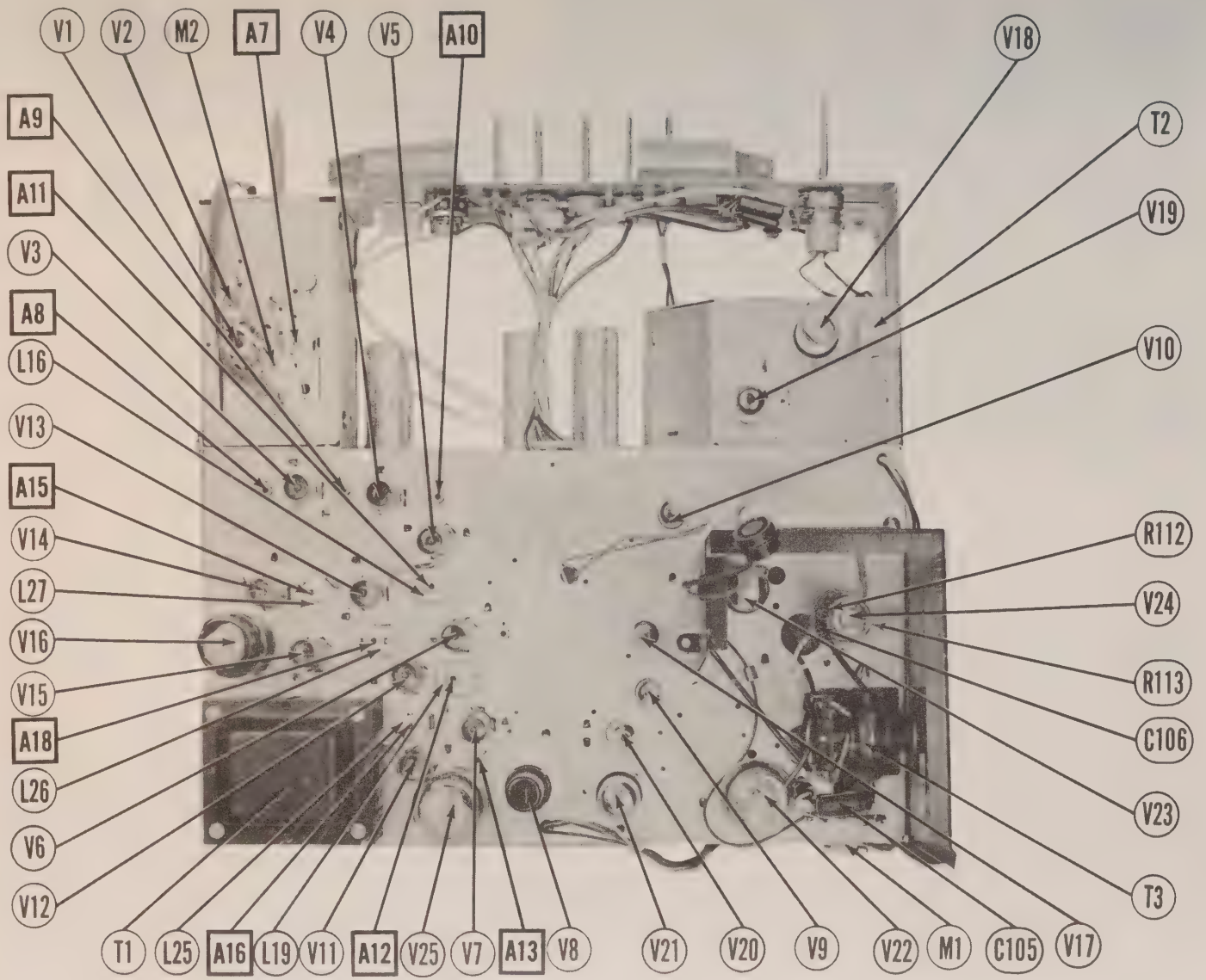
HOWARD W. SAMS & CO., INC. • Indianapolis, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

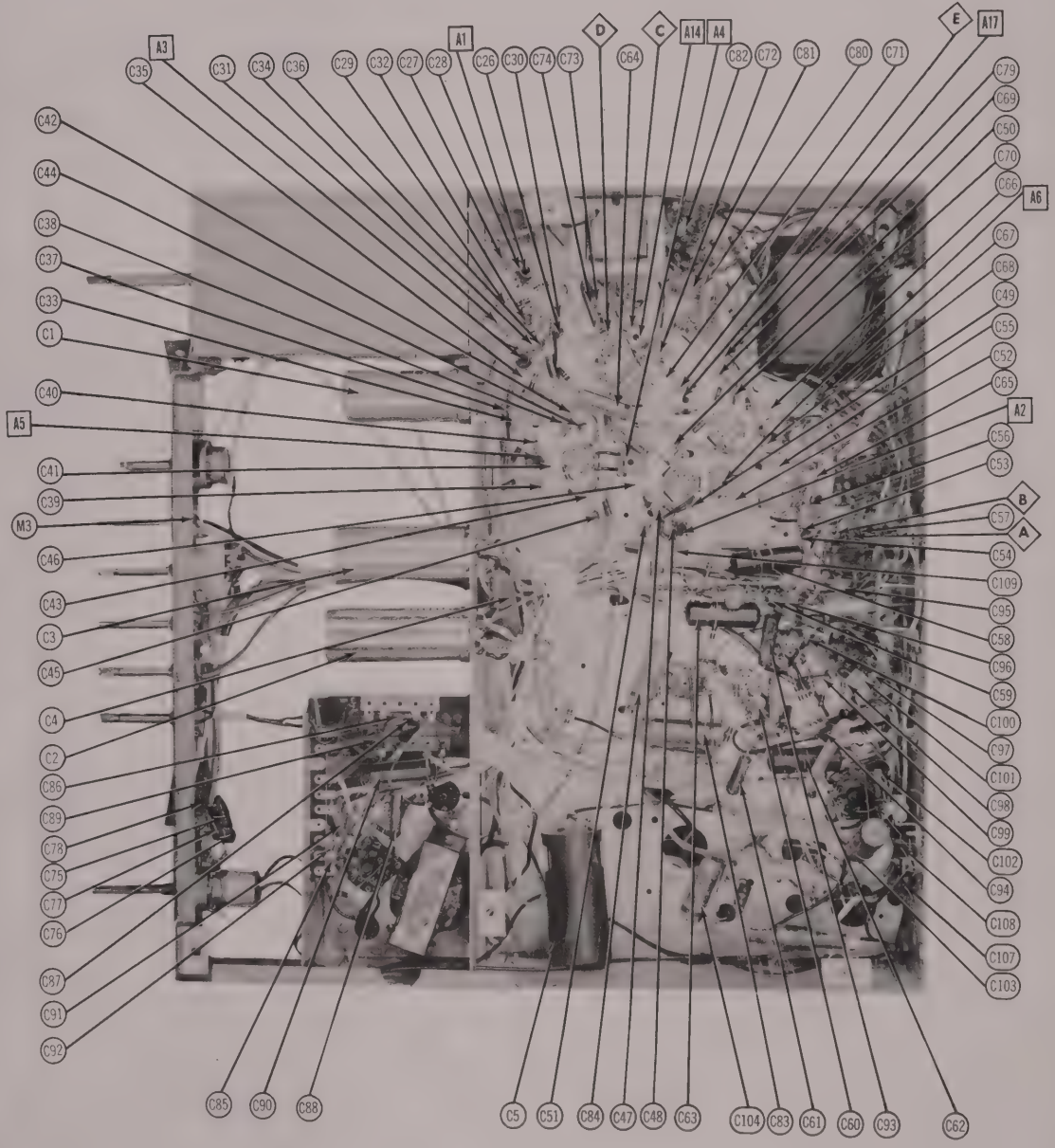
DATE 11-51 SET 151 FOLDER 5



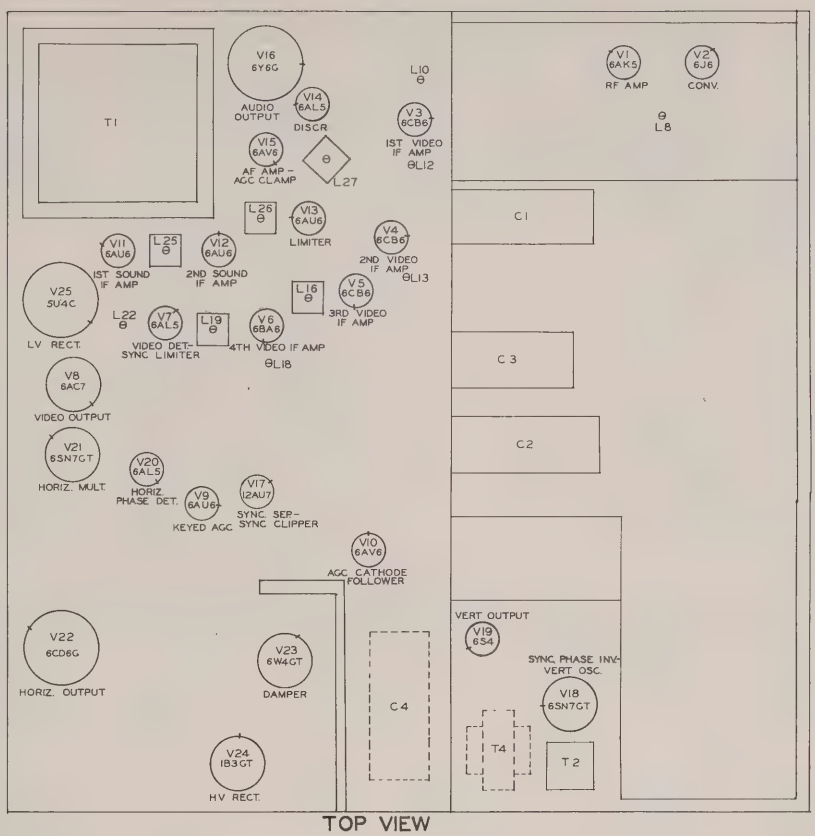
ARVIN MODELS
5210, 5211, 5212 (Ch. TE315)



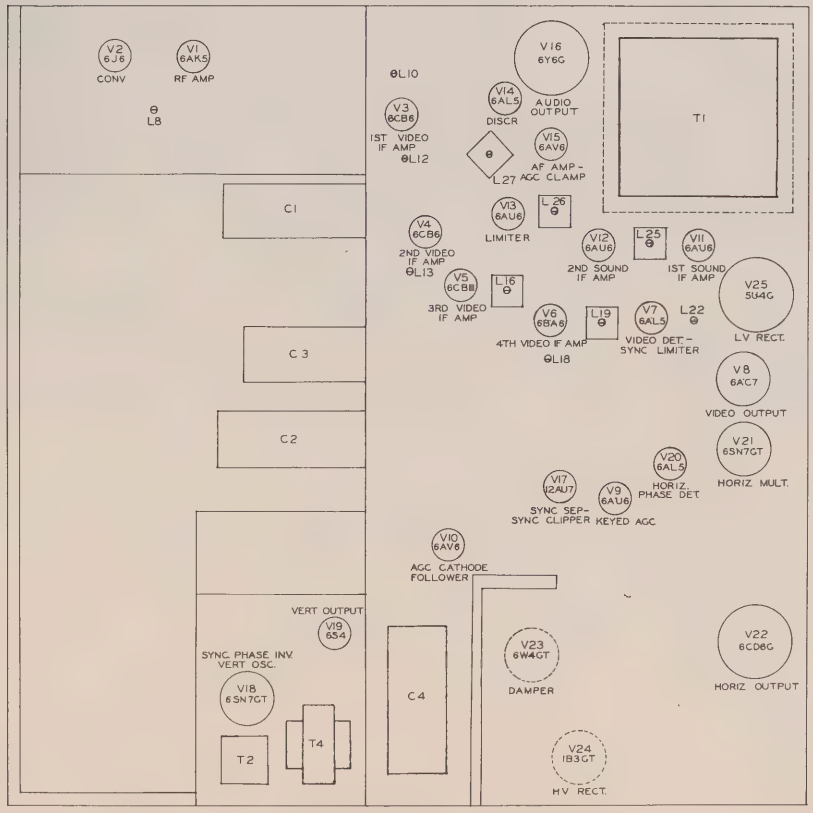
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW - CAPACITOR AND ALIGNMENT IDENTIFICATION



TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube, (V21), from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube and replace it with a 6J6 which has pin 1 removed. This will disable the local oscillator and prevent the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to pins 5 and 6 of V15, connect the positive lead to chassis.
During video IF alignment the common lead of the VTVM is connected to approximately 13 volt with respect to chassis. Avoid grounding the VTVM case.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	41.6MC (unmod.)	Any	DC probe to Point (A). Common to Point (B).	A1, A2	Adjust for MINIMUM deflection.
2.	"	"	39.75MC	"	"	A3, A4	"
3.	"	"	47.25MC	"	"	A5, A6	"
4.	"	"	45.3MC	"	"	A7	Adjust for maximum deflection.
5.	"	"	42.25MC	"	"	A8, A9	"
6.	"	"	45.75MC	"	"	A10	"
7.	"	"	43.1MC	"	"	A11	"
8.	"	"	45MC	"	"	A12	"
9.	.001MFD.	High side to pin 1, (Grid) of 6BA6, (V6). Low side to chassis.	4.5MC	"	"	A13	Adjust for MINIMUM deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	43MC (10MC SWP)	41.6MC 42.25MC 42.75MC 45MC 45.75MC	Any	Vert. Amp. to Point (A). Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A7 thru A12 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11.	.001MFD.	High side to pin 1, (Grid) of 6AU6, (V13). Low side to chassis.	4.5MC (unmod.)	Any	DC probe thru 2 Meg to Point (C). Common to chassis.	A14	Adjust for maximum deflection.
12.	"	"	"	"	DC probe to Point (D). Common to chassis.	A15	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
13.	"	High side to pin 1, (Grid) of 6AU6, (V11). Low side to chassis.	"	"	DC probe thru 2 Meg to Point (E). Common to chassis.	A16, A17, A18	Adjust for maximum deflection.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	.001MFD.	High side to pin 1, (Grid) of 6AU6, (V13). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. Amp. thru 47KΩ to Point (C). Low side to chassis.	A14	Adjust for maximum amplitude and symmetry as per figure 2.
12.	"	"	"	"	"	Vert. Amp. to Point (D). Low side to chassis.	A15	Adjust A15 so 4.5MC occurs at center of crossover lines as per figure 3. Retouch A14 for maximum amplitude and straightness of crossover lines.
13.	"	High side to pin 1, (Grid) of 6AU6, (V11). Low side to chassis.	"	"	"	Vert. Amp. thru 47KΩ to Point (E). Low side to chassis.	A16, A17, A18	Adjust for maximum amplitude and symmetry as per figure 2.

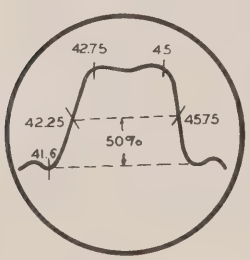


FIG. 1

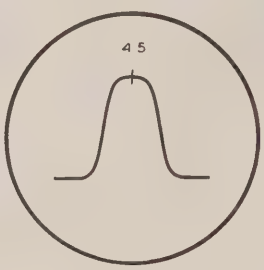


FIG. 2

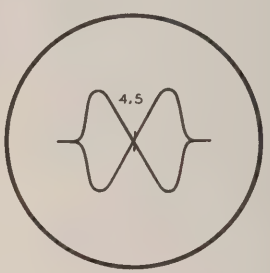


FIG. 3

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Leave the bias used during video IF alignment connected.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
14.	Two 120Ω carbon resistors	Across antenna terminal with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. Amp. to Point (A). Low side to chassis.	A19	Adjust to place sound marker as shown in figure 4. The video marker should be at 50%.
15.	"	"	207MC (10MC SWP)	205.25MC 209.75MC	12	"		Check all high band channels to see that the markers can be properly placed well within the range of the fine tuning control. If not make compromise adjustment of A19.
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
16.	"	"	85MC (10MC SWP)	83.25MC 87.75MC	6	"	A20	Adjust to place sound marker as shown in figure 4. The video marker should be at 50%.
17.	"	"	79MC (10MC SWP)	77.25MC 81.75MC	5	"		Check all low band channels to see that the markers can be properly placed well within the range of the fine tuning control. If not make compromise adjustment of A20.
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

THE RF AND MIXER PORTION OF THIS RECEIVER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ADJUSTMENT OF THIS PORTION SHOULD NOT BE REQUIRED IN THE FIELD.

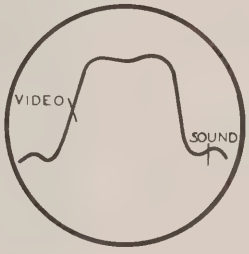


FIG.4

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to the mid-position of its range.

Adjust the horizontal lock slug, (B1), until the picture synchronizes horizontally.

Adjust the horizontal drive trimmer, (B2), counter-clockwise as far as possible without crowding or bright vertical lines appearing in the picture.

Adjust the width slug, (B3), until the picture is slightly wider than necessary to fill the mask horizontally.

DISASSEMBLY INSTRUCTIONS

1. Remove nine push-on type control knobs.
2. Remove six wood screws from rear cover. Remove rear cover.
3. Remove interlock switching arrangement.
4. Disconnect built-in antenna.
5. Disconnect speaker.
6. Remove six 3/8" hex head bolts from chassis. Remove chassis.
7. Remove four 5/16" hex nuts from speaker. Remove speaker.

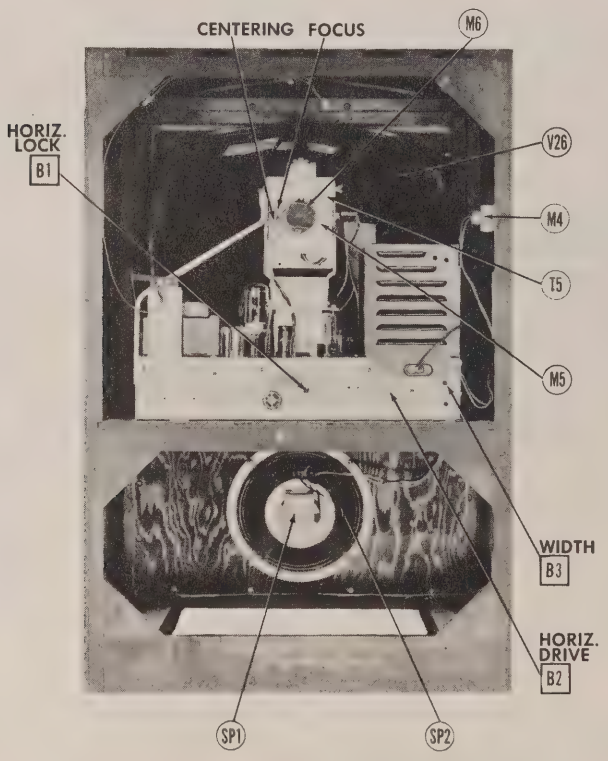
NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.

RESISTANCE MEASUREMENTS

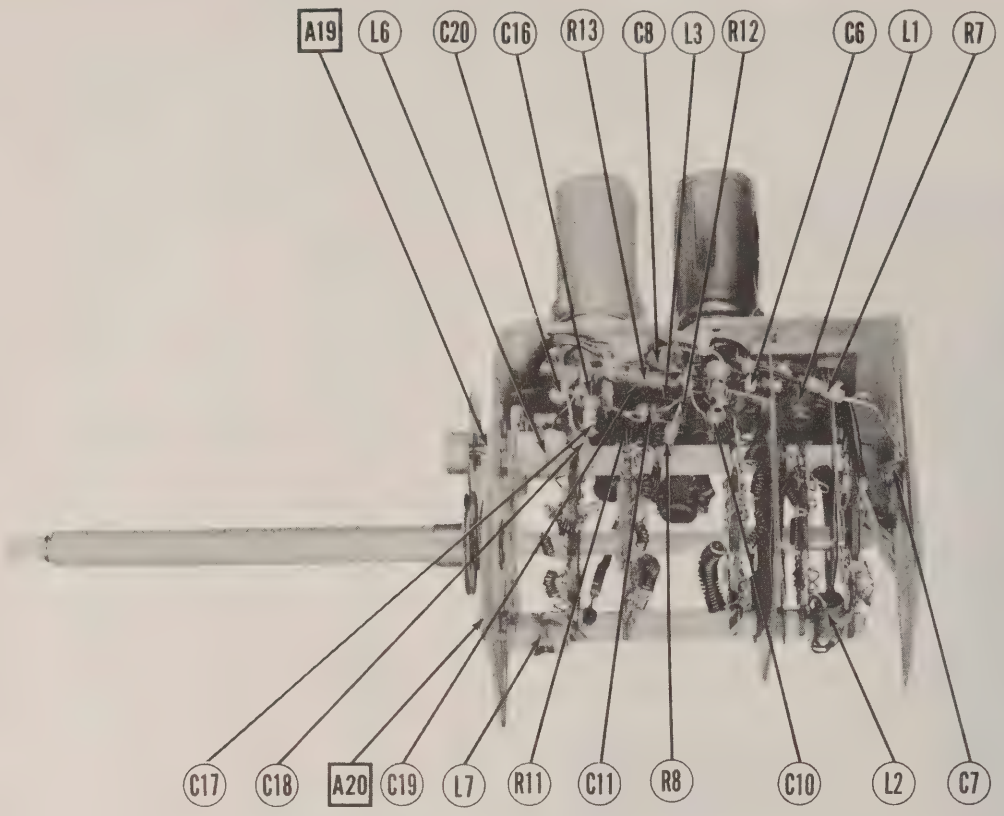
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AK5	120KΩ	0Ω	0Ω	.2Ω	▲6.2KΩ	▲6.2KΩ	0Ω		
V 2	6J6	▲6.2KΩ	▲2KΩ	0Ω	.2Ω	220KΩ	12KΩ	0Ω		
V 3	6CB6	55KΩ	47Ω	0Ω	.1Ω	▲1.5KΩ	▲1.5KΩ	0Ω		
V 4	6CB6	58KΩ	47Ω	.1Ω	0Ω	▲1.4KΩ	▲1.4KΩ	0Ω		
V 5	6CB6	40KΩ	47Ω	0Ω	.1Ω	▲1.5KΩ	▲1.5KΩ	0Ω		
V 6	6BA6	1.8Ω	0Ω	.1Ω	0Ω	▲1.4KΩ	▲1.4KΩ	120Ω		
V 7	6AL5	0Ω	4.7KΩ	.1Ω	0Ω	50Ω	0Ω	4.7Meg		
V 8	6AC7	0Ω	0Ω	50Ω	4.7KΩ	80Ω	▲13KΩ	.1Ω	▲5KΩ	
V 9	6AU6	▲60KΩ	▲680Ω	▲0Ω	▲.1Ω	200KΩ	†10KΩ	▲680Ω		
V 10	6AV6	100KΩ	12KΩ	0Ω	.1Ω	Inf.	Inf.	▲220Ω		
V 11	6AU6	100KΩ	0Ω	0Ω	.1Ω	▲1.2KΩ	▲1.2KΩ	68Ω		
V 12	6AU6	470KΩ	0Ω	0Ω	.1Ω	▲1.2KΩ	▲1.2KΩ	150Ω		
V 13	6AU6	22KΩ	0Ω	.1Ω	0Ω	▲18KΩ	▲18KΩ	0Ω		
V 14	6AL5	0Ω	100KΩ	.1Ω	2Ω	200KΩ	0Ω	100KΩ		
V 15	6AV6	10Meg	0Ω	0Ω	.1Ω	34KΩ	34KΩ	†220KΩ		
V 16	6Y6G	Inf.	▲.1Ω	†420Ω	†2.9KΩ	240KΩ	.4Ω	▲0Ω	16KΩ	
V 17	12AU7	▲22KΩ	▲14KΩ	▲280KΩ	.1Ω	.1Ω	▲22KΩ	2.2Meg	0Ω	0Ω
V 18	6SN7GT	2.5Meg	#1.9Meg	0Ω	4.7Meg	†3.3KΩ	3.3KΩ	.1Ω	0Ω	
V 19	6S4	Inf.	2.7KΩ	2.2Meg	.1Ω	0Ω	2.2Meg	Inf.	Inf.	#3.2KΩ
V 20	6AL5	4.8Meg	4.8Meg	.1Ω	0Ω	15KΩ	0Ω	15KΩ		
V 21	6SN7GT	5.1Meg	†8.2KΩ	1.2KΩ	120KΩ	†120KΩ	1.2KΩ	0Ω	.1Ω	
V 22	6CD6G	Inf.	0Ω	220Ω	Inf.	470KΩ	†500Ω	.1Ω	†8KΩ	Top Cap #51Ω
V 23	6W4GT	Inf.	Inf.	270KΩ	Inf.	†500Ω	Inf.	#0Ω	#.1Ω	
V 24	1B3GT	PINS 1-8 HAVE INF. RESISTANCE								Top Cap #500Ω
V 25	5U4G	#1.8KΩ	30KΩ	▲220Ω	71Ω	50Ω	74Ω	Inf.	30KΩ	
V 26	21AP4	0Ω	▲30KΩ	PIN 10 #1.8KΩ	PIN 11 ▲220KΩ	PIN 12 .1Ω				

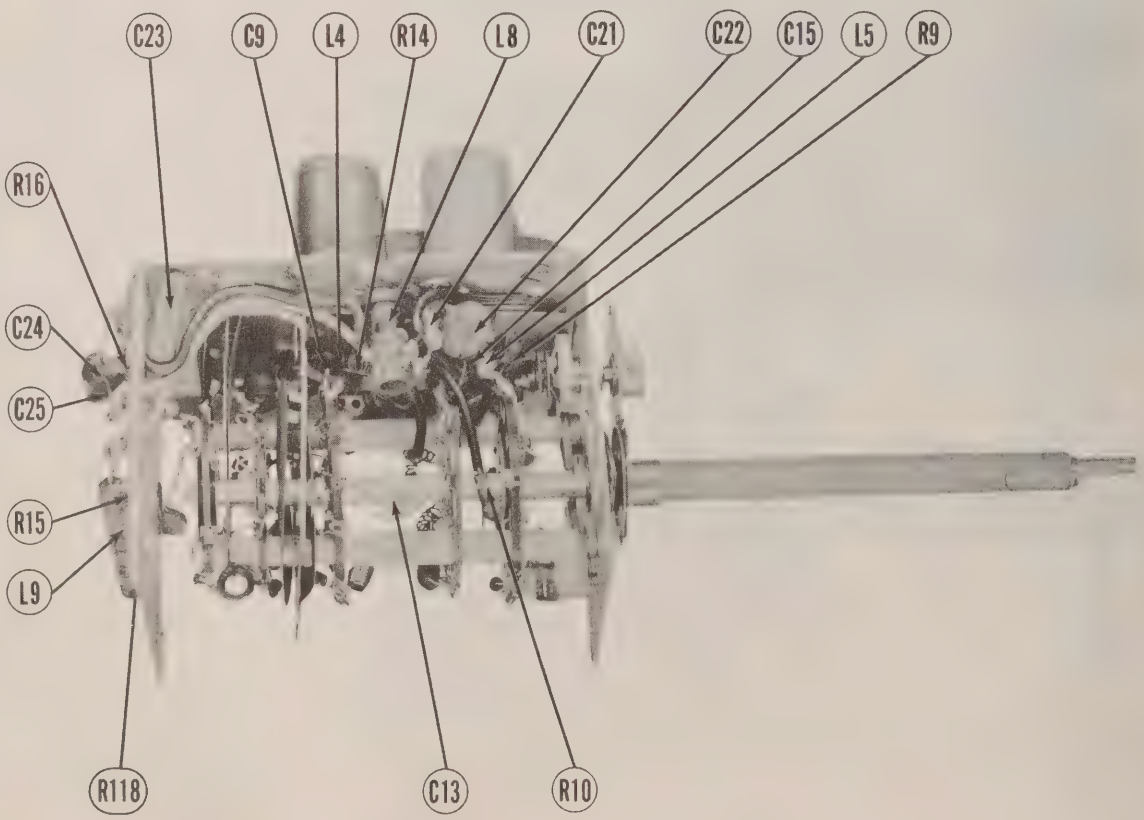
TV-PHONO SWITCH IN TV POSITION
LOCAL AND DISTANCE SWITCH IN LOCAL POSITION
† MEASURED FROM PIN 8 OF V25
▲ MEASURED FROM PIN 8 OF V16
MEASUREDFROM PIN 3 OF V23



CABINET-REAR VIEW



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No	USE	REPLACEMENT DATA: ARVIN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amplifier	6AK5	6AK5	7BD	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd. Video IF Amp.	6CB6	6CB6	7CM	
V6	4th. Video IF Amp, Video Detector-Sync. Limiter	6BA6	6BA6	7CM	
V7	Video Output	6AL5	6AL5	6BT	
V8	Keyed AGC	6AC7	6AC7	8N	
V9	Keyed AGC	6AU6	6AU6	7BK	
V10	AGC Cathode Follower	6AV6	6AV6	7BT	
V11	1st. Sound IF Amp.	6AU6	6AU6	7BK	
V12	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
V13	Limiter	6AU6	6AU6	7BK	
V14	Discriminator	6AL5	6AL5	6BT	
V15	AF Amplifier-AGC Clamp	6AV6	6AV6	7BT	
V16	Audio Output	6Y8G	6Y8G	7AC	
V17	Sync Separator-Sync. Clipper	12AU7	12AU7	9A	
V18	Sync. Phase Inv - Vert Oscillator	6SN7GT	6SN7GT	8BD	
V19	Vert. Output	6S4	6S4	9AC	
V20	Horizontal Phase Detector	6AL5	6AL5	6BT	
V21	Horizontal Mult.	6SN7GT	6SN7GT	8BD	
V22	Horiz. Output	6CD6G	6CD6G	5BT	
V23	Damper	6W4GT	6W4GT	4CG	
V24	HV Rectifier	1B3GT	1B3GT	3C	
V25	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No	REPLACEMENT DATA: ARVIN PART No	REPLACEMENT DATA: SYLVANIA PART No.	REPLACEMENT DATA: THOMAS PART No.	RTMA BASE TYPE	NOTES
V26	21AP4			12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ARVIN PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	E22422-7	AFH3-43		UPT44145		TVL-3785	▲ Filter
B	40	450		PRS450/40		BR1235A		TVA-1604	■ Filter
C	10	450							▲ Audio Output Screen Decoupling
D	10	350							◆ Filter
C2A	80	450	E22422-9	AFH4-82		UPT42145-VIO		TVL-3790	
B	40	250		PRS250/40		BR4025A		TVA-1310	■ Audio Output Cathode ▲ Video Amp. Screen
C	10	150							Vert. Output Cathode
D	80	50							▲ Audio Output Plate
C3A	40	450	E22422-8	AFH3-41		UPT44145		TVL-3785	◆ Damper Plate Dec.
B	10	450		PRS250/40		BR4025A		TVA-1705	▲ Vert. Output Dec. Decoupling
C	10	450							
D	40	350							
C4	10	450	A24978	PRS450/10		BR1045A		TVA-1705	Vert. Output Dec.
C5	3000	15	E22422-12	AFH1-04		UP3M-15		RI15	Bias Filter
C6	15		S115		D6-150		GP1K-150	5GA-Q15	RF Coupling
C7	1000		A23078	BPD-001	DD-102		801-001	5HK-D1	AGC Filter
C8	1000		A23078	BPD-001	DD-102		801-001	5HK-D1	RF Amp. Screen
C9	1000		[illegible]	BPD-001	DD-102		801-001	5HK-D1	RF Amp. Fil. †
C10	470		S1470		D6-471		GP2K-471	5GA-T47	RF Amp. Plate
C11	.45						NP0K-R45		RF Coupling
C12	.5				TCZ-.5		NP0K-R50		RF Coupling *
C13	.8						NP0K-R80		RF Coupling *
C14	1.8						NP0K-1R8		RF Coupling *
C15	25		S125		D6-250		GP1K-250	5GA-Q25	RF Coupling
C16	.68				TCZ-.68		NP0K-R68		Osc. Coupling
C17	10		S10NP0		TCZ-10		NP0K-100	5TCC-Q1	Osc. Grid Cap.
C18	1.8						NP0K-1R8		Fixed Trimmer †
C19	1000		[illegible]	BPD-001	DD-102		801-001	5HK-D1	Conv. Fil.
C20	1.5						N330K-1R5		Osc. Feedback
C21	15		S115		D6-150		GP1K-150	5GA-Q15	Fixed Trimmer
C22	5000		A21674	BPD-005	DD-502		811-005	5HK-D5	RF Bypass
C23	240	500		1468-00025			GP2K-241	1FM-332	Mixer Plate Dec.
C24	1000		A23078	BPD-001	DD-102		801-001	5HK-D1	RF Bypass
C25	5000		A21674	BPD-005	DD-502		811-005	5HK-D5	AGC Filter
C26	1000		A23078	BPD-001	DD-102	1W5D1	801-001	5HK-D1	AGC Filter
C27	5000		A21674	BPD-005	DD-502	1D5D5	811-005	5HK-D5	IF Coupling
C28	36						N330K-360		Fixed Trimmer
C29	5		C20205-9		TCZ-4.7		NP0K-050		Fixed Trimmer
C30	1000		A23078	BPD-001	DD-102	1W5D1	801-001	5HK-D1	AGC Filter
C31	810		C20351-1	S1680	D6-681	1W5T7	GP2K-681	5GA-T68	1st. Video IF Dec.
C32	1000		A23078	BPD-001	DD-102	1W5D1	801-001	5HK-D1	1st. Video IF Fil.
C33	1000		A23078	BPD-001	DD-102	1W5D1	801-001	5HK-D1	RF Bypass
C34	47						N330K-470		Fixed Trimmer
C35	47		C20205-19	S147	D6-470	5W5Q5	GP1K-470	5GA-Q47	IF Coupling
C36	1000		A23078	BPD-001	DD-102	1W5D1	801-001	5HK-D1	AGC Filter
C37	610		C20351-1	[illegible]	D6-681	1W5T7	GP1K-681	5GA-T68	2nd. Video IF Dec.
C38	1000		A23078	BPD-001	DD-102	1W5D1	801-001	5HK-D1	2nd. Video IF Fil.
C39	1000		A23078	[illegible]	DD-102	1W5D1	801-001	5HK-D1	RF Bypass
C40	39						N330K-390		Fixed Trimmer
C41	47		C20205-19	S147	D6-470	5W5Q5	GP2K-470	5GA-Q47	IF Coupling
C42	1000		A23078	BPD-001	DD-102	1W5D1	801-001	5HK-D1	AGC Filter
C43	810		C20351-1	S1680	D6-681	1W5T7	GP2K-681	5GA-T68	3rd. Video IF Dec.
C44	1000		A23078	BPD-001	DD-102	1W5D1	801-001	5HK-D1	3rd. Video IF Fil.
C45	1000		A23078	BPD-001	DD-102	1W5D1	801-001	5HK-D1	RF Bypass
C46	47		C20205-19	S147	D6-470	5W5Q5	GP1K-470	5GA-Q47	IF Coupling
C47	2.3		C20205-7				N220K-2R2		IF Coupling
C48	36						N330K-360		Fixed Trimmer

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ARVIN PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C49	510		C20351-1	S1880	D6-681	1W5T7	GP2K-681	5GA-T68	4th. Video IF Dec.
C50	1000		A23078	BPD-001	DD-102	1W5D1	801-001	5HK-D1	4th. Video IF Fil.
C51	1000		A23078	BPD-001	DD-102	1W5D1	801-001	5HK-D1	RF Bypass
C52	68		C20205-11	S168	D6-680	5W5Q7	GP1K-680	5GA-Q68	IF Coupling
C53	1000		A23078	BPD-001	DD-102	1W5D1	801-001	5HK-D1	Video Det. Fil.
C54	1000		A23078	BPD-001	DD-103	1W5D1	801-001	5HK-D1	Bias Filter
C55	5		C20205-9		N15NP0		NP0K-050		Video Det. Filter
C56	120				TCZ-120		NP0-333-121		Fixed Trimmer
C57	.023	200	C20291-223	P488-022	DF-203	PTE482		3TM-S3	Video amp. Cathode
C58	.23	400	C20292-224	P488-23		GT4P3		3TM-P23	Tone Coupling
C59	.047	400	C20292-473	P488-047	DF-503	PTE485		4TM-S47	Picture Tube grid
C60	.001	600	C20295-102	P688-001	D6-102	PTE6D1	GP2L-102	9TM-D1	Horiz. Feedback
C61	.0047	600	C20295-472	P688-0047	D6-472	PTE6D5	GP2-333-472	5TM-D47	AGC Filter
C62	.47	200	C20291-474	P288-47		GT2P5		2TM-P47	AGC Filter
C63	.47	200	C20291-474	P288-47		GT2P5		2TM-P47	AGC Filter
C64	.1	200	C20291-104	P288-1	DD-104	PTE4P1		2TM-P1	AGC Coupling
C65	.47		C20205-19	S147	D6-470	5W5Q5	GP1K-470	5GA-Q47	Sound IF Coupling
C66	5000		A21674	BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st. Sound IF Dec.
C67	5000		A21674	BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st. Sound IF Cathode
C68	47		C20205-19	S147	D6-470	5W5Q5	GP1K-470	5GA-Q47	Sound IF Coupling
C69	5000		A21674	BPD-005	DD-502	1D5D5	811-005	5HK-D5	2nd. Sound IF Decoupling
C70	5000		A21674	BPD-005	DD-502	1D5D5	811-005	5HK-D5	2nd. Sound IF Cathode
C71	47		C20205-19				N220K-470		Limiter Grid Filter
C72	5000		A21674	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Limiter Decoupling
C73	47		C20205-19	S147	D6-470	5W5Q5	GP1K-470	5GA-Q47	RF Bypass
C74	.001	600	C20295-102	P688-001	D6-102	PTE6D1	GP2L-102	9TM-D1	De-emphasis
C75	.0022	600	C20295-222	P688-0022	D6-222	PTE6D2	GP2-333-222	9TM-D22	Tone Comp.
C76	.0033	600	C20295-332	P688-0033	D6-332	PTE6DJ	GP2-333-332	9TM-D3	Tone Comp.
C77	.01	600	C20295-103	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C78	.0033	600	C20295-332	P688-0033	D6-332	PTE6D3	GP2-333-332	6TM-D3	Audio Coupling
C79	270	500	C20290-271	1468-0003	D6-271	5W5T3	GP2K-271	MS-33	AF Amp. Plate
C80	.01	1000	C20296-103	P1068-01		PTE16S1		MB-S1	Audio Coupling
C81	.1	400	C20292-104	P488-1	DF-104	PTE4P1		4TM-P1	Audio Output Grid
C82	.01	1000	C20296-103	P1068-01		PTE16S1		MB-S1	Audio Output Plate
C83	.47	200	C20291-474	P288-47		GT2P5		2TM-P47	Sync. Sep. Cathode
C84	.047	600	C20295-473	P688-047	DF-503	PTE6S5		6TM-S47	Sync. Coupling
C85	130	500	C20065-121	1468-00015	D6-121	5W5T15	GP2K-121	1FM-315	Sync. Coupling
C86A	.0023			P688-0022		PTE6D2	GP2-333-222		Vert. Integrator Net.
B	.0047		*C24166	P688-0047	*PC-100	PTE6D5	GP2-333-472	*s101C1	Vert. Integrator Net.
C	.0047			P688-0047		PTE6D5	GP2-333-472		Vert. Integrator Net.
C87	.047	600	C20324-472	P688-0047	D6-473	PTE6D5	GP2-333-473	6TM-D47	Vert. Osc. Grid
C88	.0015	600	C20295-152	P688-0015	D6-152		GP2L-152	6TM-D15	Fixed Trimmer
C89	.047	600	C20295-473	P688-047	DF-503	PTE6S5		6TM-S47	Vert. Discharge
C90	.1	600	C20295-104	P688-1	DF-104	PTE6P1		6TM-P1	Vert. Sweep Coupling
C91	1000	500	C24612-102	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Horiz. Sync. Coupling
C92	1000	500	C24612-102	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Horiz. Sync. Coupling
C93	.01	600	C20295-103	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Voltage Divider
C94	.01	600	C20358-103	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	AFC Filter
C95	.047	300	C20291-473	P288-047	DF-503	PTE4S5		2TM-S47	AFC Filter
C96	3900	500	C20374-392	1468-0004		1DR5D4			Fixed Trimmer
C97	100	500	C20290-101	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	Horiz. MV Plate
C98	330	500	C20290-331	1469-00035					Horiz. MV Feedback
C99	47	500	C20290-470	1469-00005		5R5Q5		MS-45	Horiz. MV Grid
C100	300	500	C20290-331	1469-00035					Horiz. Discharge
C101	270	500	C20290-271	1468-0003	D6-271	5W5T3	GP2K-271	MS-33	Horiz. Sweep Coupling
C102	.1	400	C20292-104	P488-1	DF-104	PTE4P1		4TM-P1	Horiz. Output Screen
C103	.47	200	C20291-474	P288-47		GT2P5		2TM-P47	Horiz. Output Cathode
C104	.047	600	C20295-473	P688-047	DF-503	PTE6S5		6TM-S47	Horiz. Feedback
C105	.1	400	C20292-104	P488-1	DF-104	PTE4P1		4TM-P1	Horiz. Sweep Coupling
C106	500	30000	A24094	HV20-C	TV3-502				HV Filter
C107	.01	600	C20358-103	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Line Filter
C108	.01	600	C20358-103	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Line Filter
C109	1000		A23078	BPD-001	DD-102	1W5D1	801-001	5HK-D1	4th. Video IF Cathode

* Not used in all models.
† Some models use 680MMF. in this application.
‡ Some models use .68MMF. in this application.
◆ Items C86A, C86B, C86C, R84A, R84B, R84C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ARVIN PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	25KΩ	½	E22464-17		RTV-258	SBBT-668-S	Contrast Control - Panel
B	3Meg	½					Volume Control and Switch Tapped at 1Meg - Rear
R2A	1Meg	½	E22464-22	Q11-137	AG-61-S	AN-69	Vertical Hold Control
B	Shaft		Not req.	Not req.	KSS-3	AK-4	Attach to R2A per instructions
R3A	50KΩ	½	E22464-23	Q11-123	AG-44-S	AN-31	Horiz. Hold Control
B	Shaft		Not req.	Not req.	KSS-3	AK-4	Attach to R3A per instructions
R4A	100KΩ	½	E22464-18	Q11-128	AG-49-S	AN-40	Brightness Control
B	Shaft		Not req.	Not req.	KSS-3	AK-4	Attach to R4A per instructions
R5	2Meg	½	E22464-18				Tone Control and Phono Switch
R6A	3000Ω	2	E22464-20		RTV-259		Vertical Linearity Control - Wire Wound
B	2.5Meg	½					Height control

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ARVIN PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R7	4700Ω	½	C22381-472	BTS-4700	RF Amp. Grid - See Note 2
R8	4700Ω	½	C22381-472	BTS-4700	RF Amp. Dec.
R9	12KΩ	20% ½	C22381-123	BTS-12K	Osc. Grid - See Note 3
R10	4700Ω	½	C22381-472	BTS-4700	Osc. Plate
R11	6800Ω	20% ½	C22381-682	BTS-6800	Mixer Grid - See Note 4
R12	220KΩ	20% ½	C22381-224	BTS-220K	Mixer Grid
R13	15KΩ	20% ½	C2238o-153	BTS-15K	Voltage Divider - See Note 5
R14	470Ω	20% ½	C22381-471	BTS-470	Decoupling
R15	1000Ω	20% ½	C22381-102	BTS-1000	Voltage Divider
R16	560KΩ	½	C22381-564	BTS-560K	AGC Network
R17	4700Ω	½	C22381-472	BTS-4700	Mixer Coil Shunt - See Note 1
R18	15KΩ	½	C22381-153		1st. Video IF Amp. Grid
R19	47Ω	½	C22381-470		1st. Video IF Amp. Cathode
R20	1000Ω	20% ½	C20061-102	BTS-1000	1st. Video IF Amp. Decoupling
R21	3300Ω	20% ½	C20061-332	BTS-3300	AGC Network

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ARVIN PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R22	150Ω	20% ½	C20061-151	BTS-150	Decoupling
R23	18KΩ	5% ½	C22382-183		2nd. Video IF Amp. Grid
R24	47Ω	½	C22381-470		2nd. Video IF Amp. Cathode
R25	1000Ω	20% ½	C20061-102	BTS-1000	2nd. Video IF Amp. Decoupling
R26	150Ω	20% ½	C20061-151	BTS-150	Decoupling
R27	3300Ω	½	C22381-332	BTS-3300	AGC Network
R28	47Ω	½	C22381-470		3rd. Video IF Amp. Cathode
R29	1000Ω	20% ½	C20061-102	BTS-1000	3rd. Video IF Amp. Decoupling
R30	150Ω	20% ½	C20061-151	BTS-150	Decoupling
R31	22KΩ	½	C22381-223	BTS-22K	Cathode Trap, Coil Shunt
R32	120Ω	½	C22381-121	BTS-120	4th. Video IF Amp. Cathode
R33	1000Ω	20% ½	C22061-102	BTS-1000	4th. Video IF Amp. Decoupling
R34	150Ω	20% ½	C20061-151	BTS-150	Decoupling
R35	4700Ω	½	C22381-472	BTS-4700	Video Output Grid
R36	68Ω	½	C22381-680		Video Output Cathode
R37	27Ω	½	C22381-270		Video Output Cathode
R38	3300Ω	5% 1	C22383-432		Video Output Plate
R39	10KΩ	½	C22381-103	BTS-10K	Video Output Screen
R40	15KΩ	½	C22381-153	BTS-15K	Voltage Divider
R41	47KΩ	½	C22381-473	BTS-47K	Keyed AGC Grid
R42	47KΩ	½	C22381-473	BTS-47K	Keyed AGC Plate
R43	47KΩ	½	C22381-473	BTS-47K	AGC Filter
R44	10KΩ	20% ½	C20061-103	BTS-10K	Keyed AGC Screen
R45	2.2Meg	½	C22381-225	BTS-2.2Meg	Voltage Divider
R46	680Ω	½	C22381-682	BTS-680	AGC Network
R47	120KΩ	½	C22381-124	BTS-120K	AGC Cathode Follower Grid
R48	12KΩ	½	C22381-123	BTS-12K	AGC Cathode Follower Cathode
R49	22KΩ	½	C22381-223	BTS-22K	AGC Network
R50	100KΩ	½	C22381-104		1st. Sound IF Amp. Grid
R51	68Ω	½	C223-680		1st. Sound IF Amp. Cathode
R52	10000Ω	½	C22381-102	BTS-1000	1st. Sound IF Amp. Decoupling
R53	5600Ω	½	C22381-562	BTS-5600	Sound IF Coil Shunt
R54	470KΩ	20% ½	C20061-474		2nd. Sound IF Amp. Grid
R55	150Ω	20% ½	C20061-151	BTS-150	2nd. Sound IF Amp. Cathode
R56	1000Ω	20% ½	C20061-103	BTS-1000	2nd. Sound IF Amp. Decoupling
R57	22KΩ	½	C22381-223		Limiter Grid
R58	47KΩ	½	C22381-473	BTS-47K	Limiter Decoupling
R59	10KΩ	½	C22381-103	BTS-10K	Voltage Divider
R60	100KΩ	½	C22381-104	BTS-100K	Discr. Diode Load
R61	100KΩ	½	C22381-104	BTS-100K	Discr. Diode Load
R62	27KΩ	½	C22381-273	BTS-27K	De-emphasis
R63	100KΩ	½	C22381-104	BTS-100K	Isolation
R64	220KΩ	20% ½	C20061-324	BTS-220K	Tone Compensation
R65	5.1Ω	½	C20308-51		Series Dial Filament
R66	10Meg	20% ½	C20061-106	BTS-10Meg	AF Amp. Grid
R67	220KΩ	½	C22381-224	BTS-220K	AF Amp. Plate
R68	100KΩ	½	C22381-104	BTS-100K	Output Grid
R69	180KΩ	5% ½	C22382-184	BTS-180K	Output Grid
R70	220Ω	2	C20302-221		Output Cathode
R71	2700Ω	2	C20302-272	BTB-2700	Output Cathode
R72	240KΩ	5% ½	C22382-244		Voltage Divider
R73	220Ω	2	C20302-221		Decoupling
R74	680Ω	½	C22381-681	BTS-680	Voltage Divider
R75	220KΩ	½	C22381-224	BTS-220K	Picture Tube Cathode
R76	10KΩ	20% ½	C20061-103	BTS-10K	Isolation
R77	270KΩ	½	C22381-274	BTS-270K	Sync. Separator Cathode
R78	22KΩ	½	C22381-223	BTS-22K	Voltage Divider
R79	2.2Meg	½	C22381-225	BTS-2.2Meg	Sync. Clipper Grid
R80	22KΩ	½	C22381-223	BTS-22K	Sync. Clipper Plate
R81	18KΩ	½	C22381-183	BTS-18K	Sync. Separator Plate
R82	4.7Meg	½	C22381-475	BTS-4.7Meg	Sync. Phase Inverter Grid
R83	330KΩ	½	C22381-334	BTS-330K	Sync. Phase Inverter Cathode
R84A	22KΩ	½			Integrator
B	8200Ω	½	C24166	BTS-8200	Integrator
C	8200Ω	½		BTS-8200	Integrator
R85	22KΩ	½	C22381-223	BTS-22K	Integrator
R86	470KΩ	½	C22381-474	BTS-470K	Vertical Osc. Transformer Shunt
R87	1.5Meg	½			Vertical Osc. Grid - See Note 6
R88	1.5Meg	½	C22381-155	BTS-1.5Meg	Vertical Osc. Plate
R89	1800Ω	2	C20302-182	BTB-1800	Decoupling
R90	10Meg	½	C22381-106	BTS-10Meg	Voltage Divider
R91	100KΩ	½	C22381-104	BTS-100K	Voltage Divider
R92	220KΩ	20% ½	C20061-224	BTS-220K	Voltage Divider
R93	220KΩ	20% ½	C20061-224	BTS-220K	Voltage Divider
R94	12KΩ	½	C22381-123	BTS-12K	Vertical Peaking
R95	2.2Meg	½	C22381-225	BTS-2.2Meg	Vertical Output Grid
R96	470Ω	½	C20103-471	BTA-470	Vertical Output Cathode
R97	100KΩ	5% ½	C22382-104	BTS-100K	Horiz. Phase Detector Diode Load
R98	100KΩ	5% ½	C22382-104	BTS-100K	Horiz. Phase Detector Diode Load
R99	4.7Meg	½	C22381-475	BTS-4.7Meg	Horiz. Phase Detector Diode Load
R100	470KΩ	½	C22381-474	BTS-470K	AFC Filter
R101	91KΩ	½	C22381-913		Horiz. MV Grid
R102	120Ω	½	C22381-121	BTB-1200	Horiz. MV Cathode
R103	8200Ω	½	C22381-822	BTS-8200	Horiz. MV Plate
R104	120KΩ	½	C22381-124	BTS-120K	Horiz. MV Plate
R105	22KΩ	½	C22381-223	BTS-22K	Horiz. Hold Control Shunt
R106	8200Ω	½	C22381-822	BTS-8200	Horiz. Peaking
R107	47Ω	½	C22381-470		Parasitic Suppressor
R108	470KΩ	½	C22381-474	BTS-470K	Horiz. Output Grid
R109	220Ω	10	C23970-15	13/4A-225	Horiz. Output Cathode - Wire Wound
R110	8000Ω	10	C23970-5	13/4A-8000	Horiz. Output Screen - Wire Wound
R111	500Ω	10	C23970-13	13/4A-500	Voltage Divider - Wire Wound
R112	3.9Ω	1			HV Filament
R113	470KΩ	20% 1	C20103-474		HV Filter
R114	50Ω	½	C23970-8	13/4A-50	Voltage Divider - Wire Wound
R115	220KΩ	20% ½	C20061-224	BTS-220K	Line Isolation
R116	15KΩ	2	C20302-153	BTB-15K	Horiz. Feedback - See Note 6
R117	3300Ω	½	C22381-332	BTS-3300	Sync. Phase Inverter Plate
R118	330Ω	½	C22381-331	BTS-3300	AGC Net.

◆ Items R84A, R84B, R84C, C86A, C86B, C86C are combined in one unit.
Note 1 Not used in all models.
Note 2 Some models use 2200Ω resistor in this application.
Note 3 Some models use 15KΩ resistor in this application.
Note 4 Some models use 4700Ω resistor in this application.
Note 5 Some models use 12KΩ resistor in this application.
Note 6 Some models use resistors in series to obtain desired value.

PARTS LIST CONTINUED ON PAGE 15

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	ARVIN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC @ 2A	640VCT .250ADC	5VAC @ 3A	6.3VAC @ 9.5A SEC. 4 6.3VAC @ 1.55A SEC. 5 6.3VAC @ 1.2A	E24654			

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	SEC.	REPLACEMENT DATA ARVIN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	190Ω	1050Ω	C-22446-1	A-8122	A-4000 ①	TBO-3 ①	Vert. Block Osc. Trans.
T3	500Ω Taps @ 4Ω, 13Ω, 37Ω, 41Ω 65Ω	0Ω	E-24989				Horiz. Output Trans.
T4	1.5KΩ Tap 4Ω		C-24990	A-8112 ①	A-3037	TSO-5	Vert. Output Trans.
T5A	25Ω		D-25005	DY-9	MDF-70		Horiz. Deflection Coils
B	47Ω						Vert. Deflection Coils

① Drill one new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	SEC.	DC RES. PRI.	SEC.	REPLACEMENT DATA ARVIN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T6	2.3KΩ	3.5Ω	198Ω	.7Ω	C-23490-1	A-3825 ①	A-3018 ①	RO-2 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS FIELD RES.	V. C. IMP.	REPLACEMENT DATA ARVIN PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	77Ω	3.6Ω	E23638		10E77S	
	CONE DIA.	V. C. DIA.				
SP2	9 3/8"	1"				

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	SEC.	REPLACEMENT DATA ARVIN PART No.	IRC PART No.	NOTES
L1	Ant. Coil	0Ω	0Ω			High Band
L2	Ant. Coil	0Ω	0Ω			Low Band
L3	Fil. Choke	0Ω				
L4	RF Coil	0Ω				
L5	Mixer Grid Coil	0Ω				
L6	Osc. Coil	0Ω				
L7	Osc. Coil	0Ω				
L8	Conv. Plate Coil	0Ω				
L9	Fil. Choke	.2Ω		A22456	CL-1	.56 Microhenry
L10	1st. Video IF	.1Ω		C24988		Includes Trap
L11	Fil. Choke	0Ω		A23095		
L12	2nd. Video IF	.1Ω		C23443		Includes Trap
L13	3rd. Video IF	.1Ω		C23444		Includes Trap
L14	Grid Choke	1.8Ω		C22500-19		20 Microhenries wound on 18KΩ resistor (white dot)
L15	Fil. Choke	0Ω		A23095		
L16	4th. Video IF	.1Ω		C23445		Includes Trap
L17	Grid Choke	1.8Ω		C22500-19		20 Microhenries wound on 18KΩ resistor (white dot)
L18	Cathode Trap	.1Ω	0Ω	C23821		
L19	5th. Video IF	.1Ω		C23446		Includes Trap
L20	Cathode Choke	1.7Ω		C22500-8		20 Microhenries wound on 12KΩ resistor (blue dot)
L21	Peaking	8Ω		C22500-4		90 Microhenries wound on 33KΩ resistor (red dot)
L22	4.5MC Trap	.3Ω		C23670		
L23	Peaking	6Ω		C22500-17		180 Microhenries wound on 47KΩ resistor
L24	Peaking	8.5Ω		C22500-18		300 Microhenries (green dot)
L25	1st. Sound IF	1.5Ω		C23448		Includes Capacitor 68MMF.
L26	2nd. Sound IF	2Ω	2Ω	C23447		Includes 2 Capacitors 43MMF.
L27	Discr. Trans.	1.7Ω	1.4Ω	C23893		Includes 2 capacitors 86MMF. (Tap .7Ω)
L28	Horiz. Osc.	50Ω		C23449		
L29	Width Coil	31Ω	15Ω	C24991		

FUSES

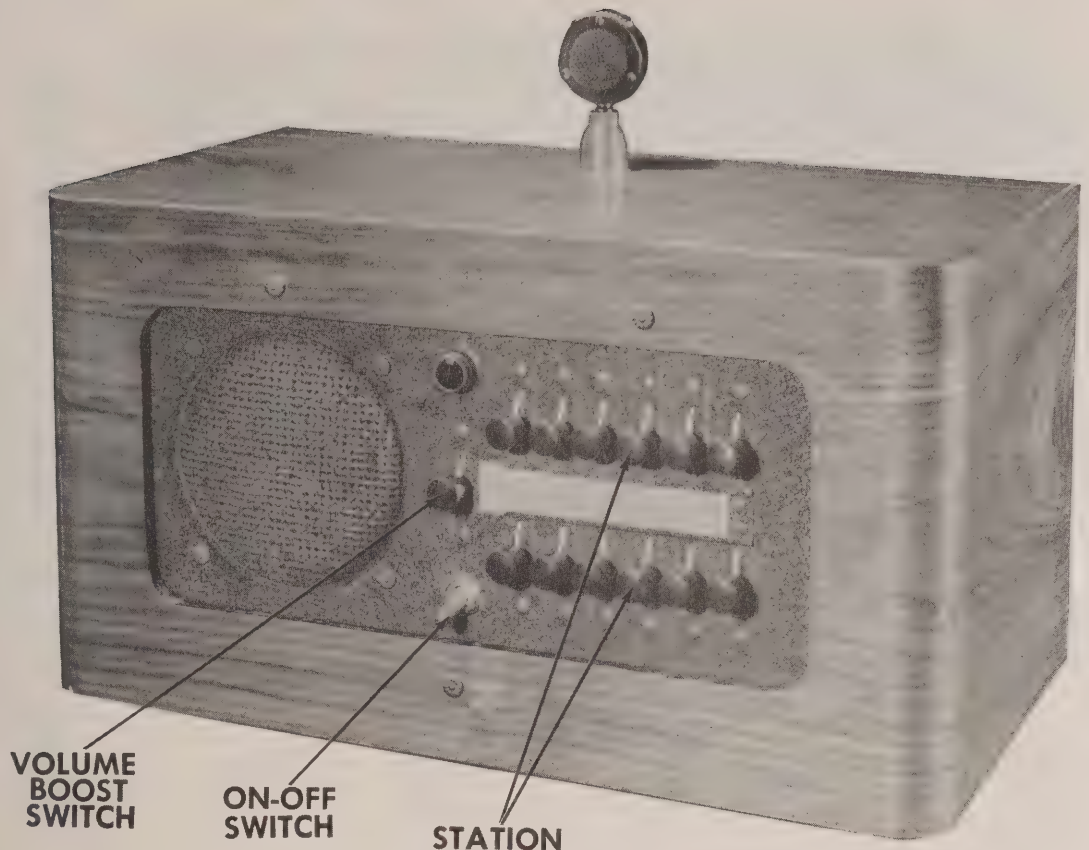
ITEM No.	TYPE	RATING	REPLACEMENT DATA ARVIN PART No. FUSE	HOLDER	LITTELFUSE PART No. FUSE	HOLDER	REMARKS
M1	3AG Pigtail	.025A	A-22493		318.250		

MISCELLANEOUS

ITEM No.	PART NAME	ARVIN PART No.	NOTES
M2	RF Tuner	AE24737-2	Complete
M3	Switch	C23685-1	Local and Distance
M4	Switch	A22868	Interlock
M5	Focus Magnet	C23910-2	
M6	Ion Trap	C24119-1	
B2	Trimmer	A24528	40-370MMF. (Horiz. Drive)
	Knob	D23602-1	Channel Selector
	Knob	D23604	Contrast
	Knob	D23605	Fine Tuning
	Knob	D23603-1	Off/On Volume
	Knob	D24699-1	Behind Control Door (5 required)

BELL SOUND MODEL 374SS

BELL SOUND MODEL 374SS



BELL SOUND MODEL 374SS

TRADE NAME	Bell Sound, Model 374SS (Belfone)	
MANUFACTURER	Bell Sound Systems, Inc., 1183 Essex Ave., Columbus, Ohio	
TYPE SET	AC Operated Intercommunications System	
TUBES (THREE)	Types 6SL7GT AF Amp., 6V6GT Power Output, 5Y3GT Rectifier	
POWER SUPPLY	110-120 Volts AC	RATING .54 Amp. at 117 Volts AC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: BELL SOUND PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	AF Amplifier	6SL7GT	6SL7GT	8BD	
V2	Power Output	6V6GT	6V6GT	7AC	
V3	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: BELL SOUND PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	10	450		AFH2-47		UPT1145		TVL-2750	■ Filter
B	10	450							▲ Filter
C2	8	450		PRS450/8		BR845A		TVA-1704	AF Amp. Dec.
C3	10	25		PRS25/10		BR102A		TVA-1204	AF Amp. Cathode
C4	10	25		PRS25/10		BR102A		TVA-1204	Output Cathode
C5	.001	600		P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Audio Coupling
C6	.005	600		P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Coupling
C7	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Output Plate

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: BELL SOUND PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	25KΩ	½	B20066P16		AG-41-W		Volume Control
B	Shaft		Not req.		RS-2		Attach to R1A per instructions

RESISTORS

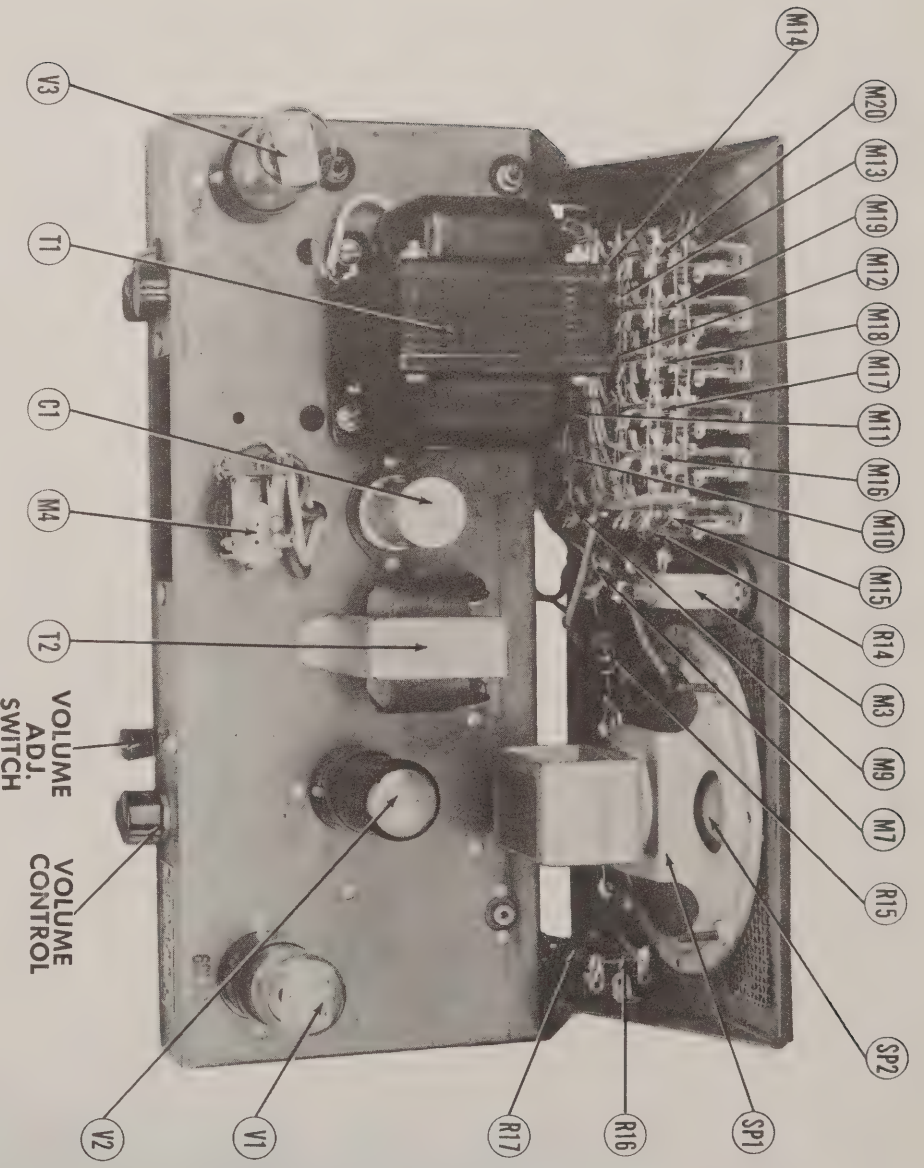
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: BELL SOUND PART No.	IRC PART No.	IDENTIFICATION CODES
R2	1.5Meg	½		BTS-1Meg	Mike Amp. Grid
R3	470KΩ	½		BTS-470K	Mike Amp. Plate
R4	470KΩ	½		BTS-470K	Isolation
R5	470KΩ	½		BTS-470K	AF Amp. Grid
R6	4700Ω	½		BTS-4700	AF Amp. Cathode
R7	270KΩ	½		BTS-270K	AF Amp. Plate
R8	100KΩ	2		BTB-100K	Mike Amp. Decoupling
R9	470K Ω	½		BTS-470K	Output Grid
R10	250Ω	10		1 3/4A-250	Output Cathode - Wire Wound
R11	25KΩ	10		1 3/4A-25K	Bleeder - Wire Wound
R12	20Ω	10		1 3/4A-20	Series Pilot Light - Wire Wound
R13	10KΩ	½		BTS-10K	Feedback
R14	1500Ω	½		BTS-1500	Tone Camp
R15	47Ω	1		BTA-47	Voice Coil Shunt
R16	500Ω 5%	1		BTA-500 -5%	Impedence Matching
R17	500Ω 5%	1		BTA-500 -5%	Impedence Matching

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: BELL SOUND PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ⓐ .54A	500VCT .060ADC	5VAC ⓐ 2A	6.3VAC ⓐ 1.25A	B-20076	PC-8403 ①	P-3149 ①	PV-60

① Drill new mounting holes

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		BELL SOUND	STANCOR	MERIT	CHICAGO	
	PRI.	SEC.	PRI.	SEC.	PART No.	PART No.	PART No.	PART No.	
T2	4KΩ	45-50Ω	290Ω	6ΩCT ½SEC.2 30Ω	B-20212				

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			BELL SOUND PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.				
SP1	PM	45-50Ω	PM5FS		5AZ50	
	CONE DIA.	V. C. DIA.				
SP2	4 7/8"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE @ CURRENT 1000 ∿	BELL SOUND PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.064A	500Ω	10 Henries	B-20058	C-1277 ②	C-2990 ①	R-1365	① Drill new mounting holes. ② File out mounting holes.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			BELL SOUND PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	3AG	2A			312002	341001	
M2	3AG	2A			312002	341001	

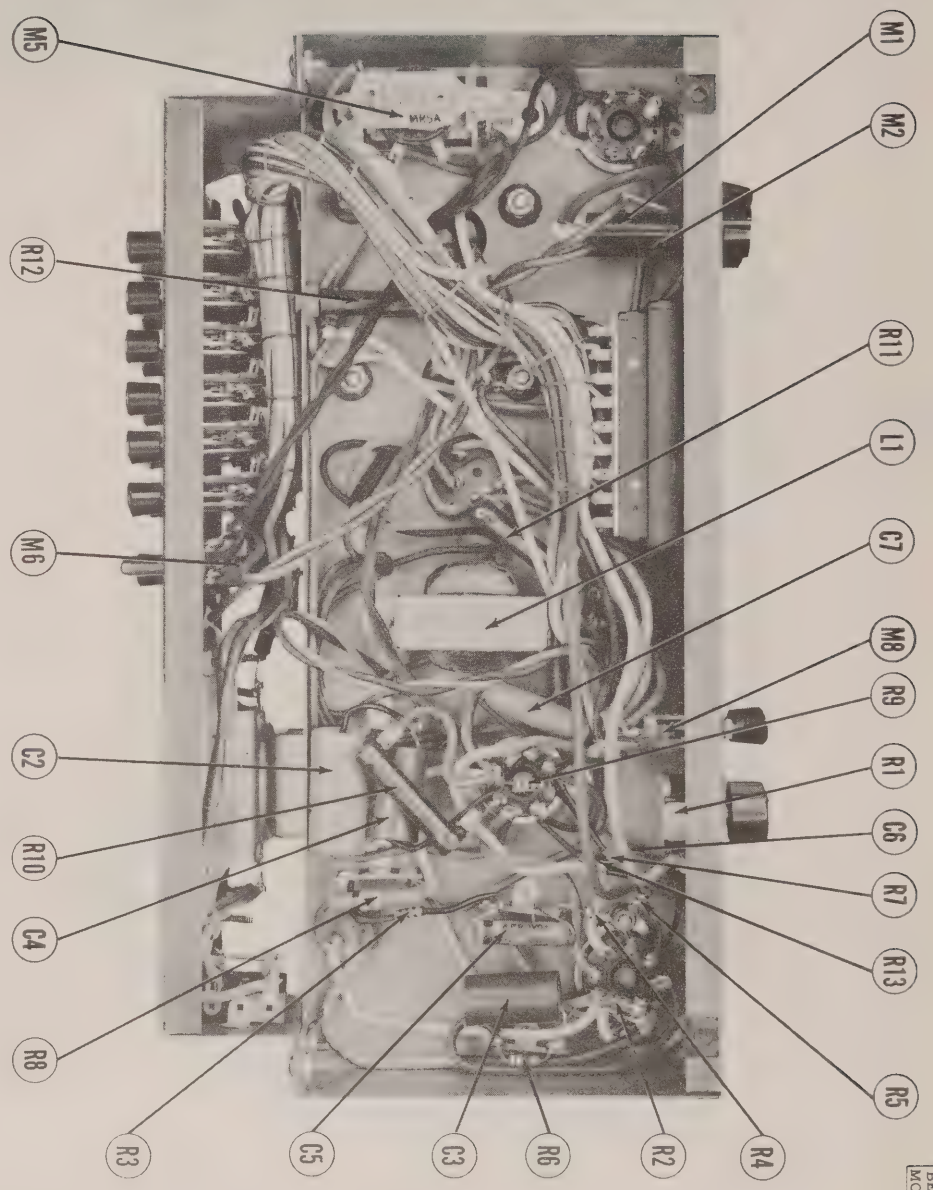
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					BELL SOUND PART No.		
M3	Bayonet	6-8	.25	Blue			Type # 44

MISCELLANEOUS

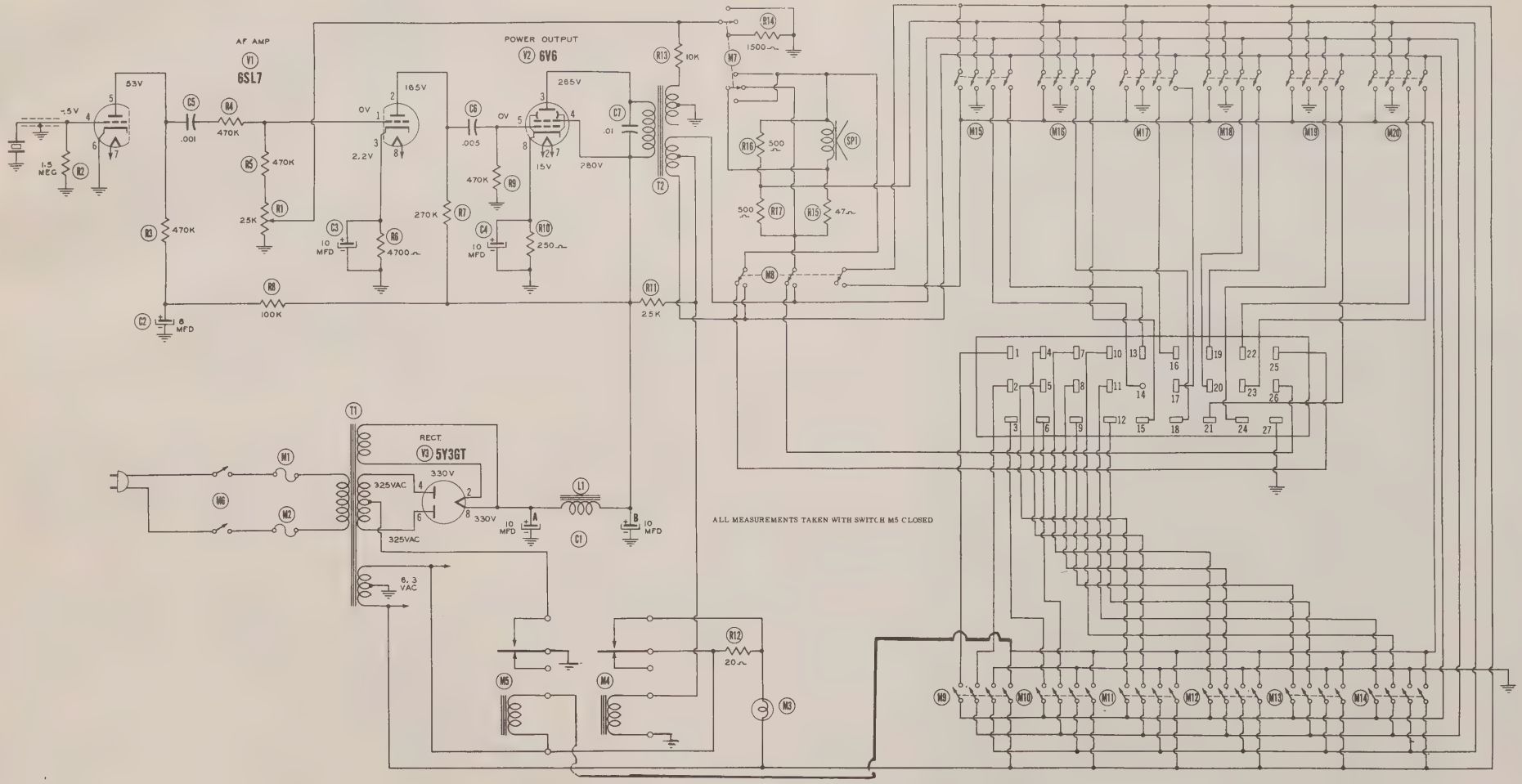
ITEM No.	PART NAME	BELL SOUND PART No.	NOTES
M4	Relay	MRS-292	
M5	Relay	MRA-1	
M6	Switch		On-Off
M7	Switch		Volume Boost
M8	Switch		Volume Adjust
M9	Switch		Station 1
M10	Switch		Station 2
M11	Switch		Station 3
M12	Switch		Station 4
M13	Switch		Station 5
M14	Switch		Station 6
M15	Switch		Station 7
M16	Switch		Station 8
M17	Switch		Station 9
M18	Switch		Station 10
M19	Switch		Station 11
M20	Switch		Station 12

CHASSIS—BOTTOM VIEW



BELL SOUND MODEL 374SS

BELL SOUND MODEL 374SS



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SL7GT	470KΩ	†270KΩ	4.7KΩ	1.5Meg	†530KΩ	0Ω	¶0Ω	¶.1Ω
V 2	6V6GT	0V	¶.1Ω	†790Ω	†500Ω	470KΩ	30Ω	¶0Ω	250Ω
V 3	5Y3GT	Inf.	36KΩ	Inf.	▲200Ω	Inf.	▲200Ω	Inf.	26KΩ

† MEASURED FROM PIN 2 OF V3
¶ MEASURED FROM PIN 2 OF V1
▲ MEASURED WITH RELAY M5 CLOSED

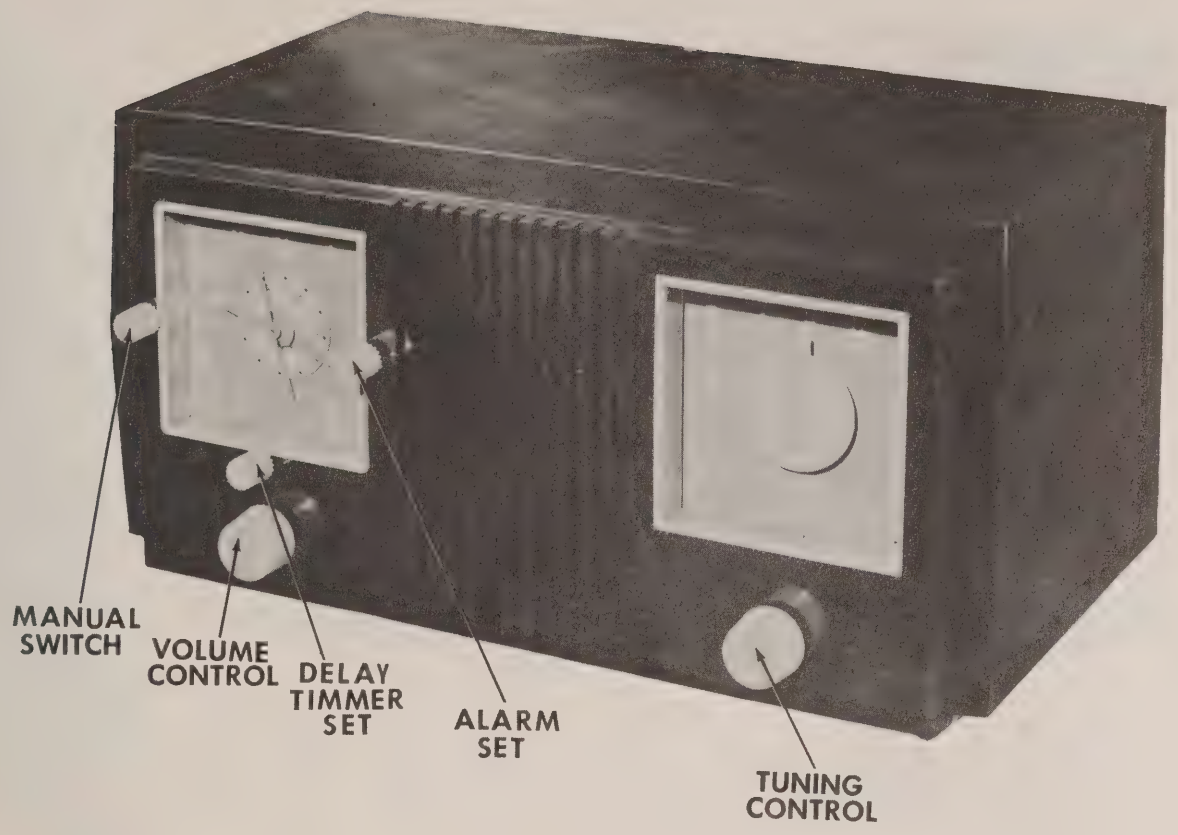
THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

© Howard W. Sams & Co., Inc. 1951

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

GENERAL ELECTRIC
MODEL 535



GENERAL ELECTRIC
MODEL 535

TRADE NAME	General Electric, Model 535
MANUFACTURER	General Electric Co., Electronics Dept., Electronics Park, Syracuse, New York
TYPE SET	AC Operated Superheterodyne Receiver with Electric Clock
TUBES (SIX)	Types 12BA6 RF Amp., 12BE6 Converter, 12BA6 IF Amp., 12AV6 DET.-AVC-AF, 35C5 Power Output, 35W4 Rectifier
POWER SUPPLY	105-125 Volts AC — RATING .3 Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	540-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial. Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD.	High side to stator on rear section of tuning gang. Low side to chassis.	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD. to reduce hum modulation.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1500KC	Tune for max. output.	"	A6	"

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: General Electric PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	RF Amplifier	12BA6	12BA6	7BK	
V2	Converter	12BE6	12BE6	7CH	
V3	IF Amplifier	12BA6	12BA6	7BK	
V4	Det.-AVC-AF	12AV6	12AV6	7BT	
V5	Power Output	35C5	35C5	7CV	
V6	Rectifier	35W4GT	35W4GT	5BQ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: General Electric PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	50	150	RCE-127	PRS150/50-50		BRD5515A		TVA-2453	Filter
B	50	150							Filter
C2	100	500	UCG-028	1468-0001	D6-101	5W5T1	GP1K-101	1FM-31	RF Coupling
C3	.05	400	RCN-053	P488-05	DF-503	PTE4S5		4TM-S5	AVC Filter
C4	47	500	UCG-020	1468-00005	D6-470	5W5Q5	GP1K-470	1FM-45	Osc. Grid Cap.
C5	6		RCW-3049				NP0K-060		Osc. Feedback
C6A	400		♦RCW-3048	1468-0004	D6-401	5W5T4		♦34C3	Diode RF Filter
B	.002			SI2000	D6-202	1W5D2	GP2-333-202		Audio Coupling
C	.005			SI5000	D6-502	1D5D5	GP2-333-502		Audio Coupling
D	200			SI200	D6-201	5W5T2	GP2K-201		AF Amp. Plate
C7	.003	600	RCC-108	P688-003	D6-302	PTE6D3	GP2-333-302	6TM-D3	Power Output Plate
C8	.047	600	UCC-045	P688-047	DF-503	PTE6S5		6TM-S47	Line Filter
C9	.05	400	RCN-053	P488-05	DF-503	PTE4S5		4TM-S5	Line Isolation

♦ Items C6A, C6B, C6C, C6D are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: General Elec. PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	RRC-153	Q13-133	AG-60-Z	AN-60	Volume Control
B	Shaft		Not req.	Not req.	KSS-3	AK-4	Attach to R1A per instructions

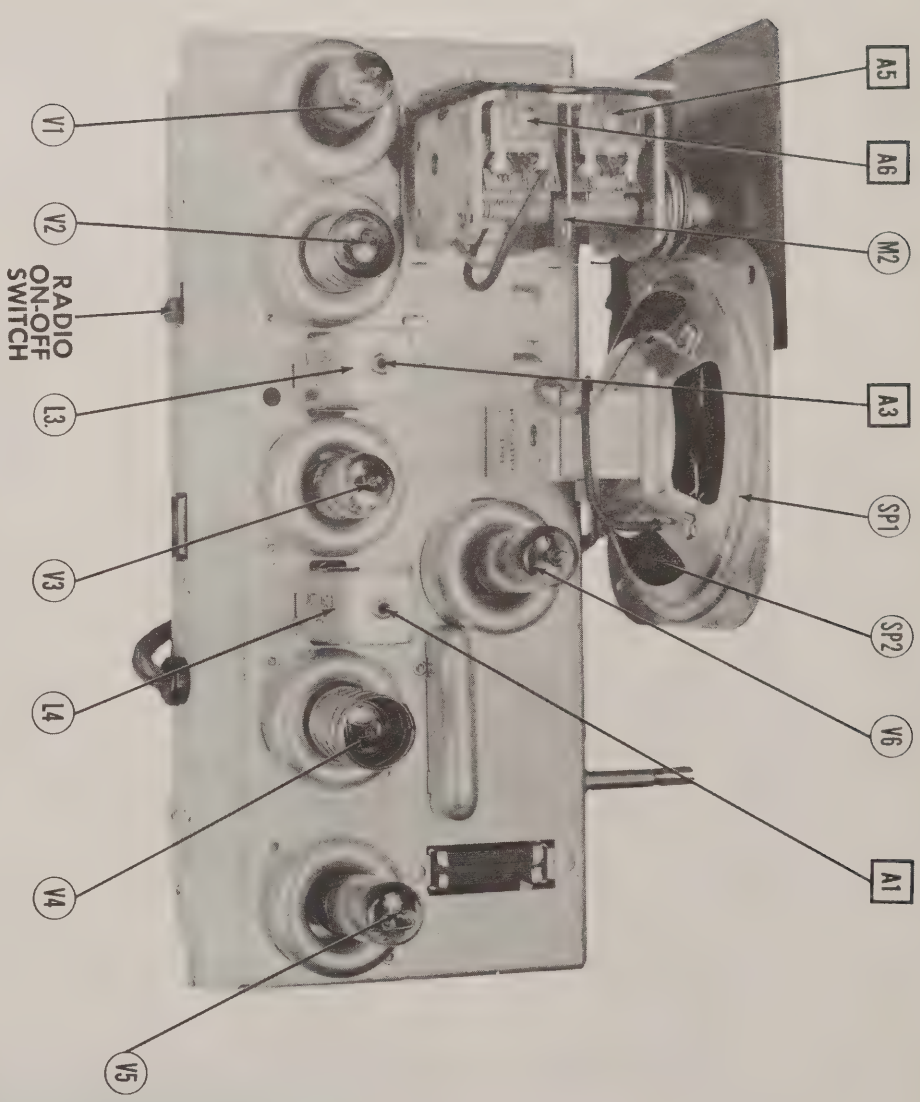
RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: General Electric PART No.	IRC PART No.	IDENTIFICATION CODES
R2	68Ω	½	URD-021		RF Amp. Cathode
R3	4700Ω	½	URD-665	BTS-4700	RF Amp. Plate
R4	22KΩ	½	URD-081	BTS-22K	Mixer Grid
R5	22KΩ	½	URD-081	BTS-22K	Osc. Grid
R6	2.2Meg	½	URD-129	BTS-2.2Meg	AVC Network
R7	68Ω	½	URD-021		IF Amp. Cathode
R8	6.8Meg	½	URD-141	BTS-6.8Meg	AF Amp. Grid
R9	470KΩ	½	URD-113	BTS-470K	AF Amp. Plate
R10	470KΩ	½	URD-113	BTS-470K	Output Grid
R11	150Ω	½	URD-29	BTS-150	Output Cathode
R12	1000Ω	2	URF-049	BTB-1000	Voltage Divider
R13	22Ω	½	URD-009		Surge Limiter

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: General Elec. PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T1	2.8KΩ	3.7Ω	250Ω Tap 12Ω	.5Ω	RTO-100	A-3330 ①	A-3031 ①	RO-3 ①	① Drill one new mounting hole.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

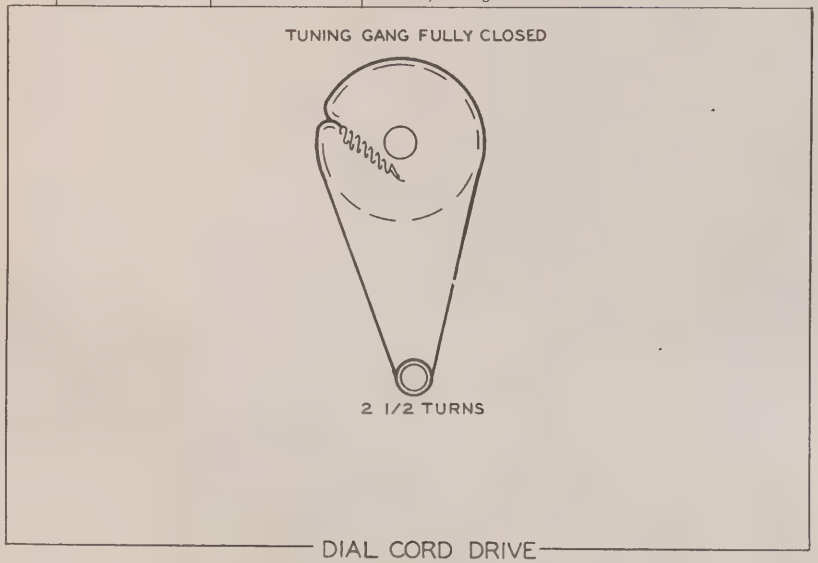
ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			General Electric PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V. C. IMP.	ROP-021	ST113 Model P4-X	4A1	
	PM	3.7Ω				
SP2	CONE DIA.	V. C. DIA.				
	4"	9/16"				

R F COILS

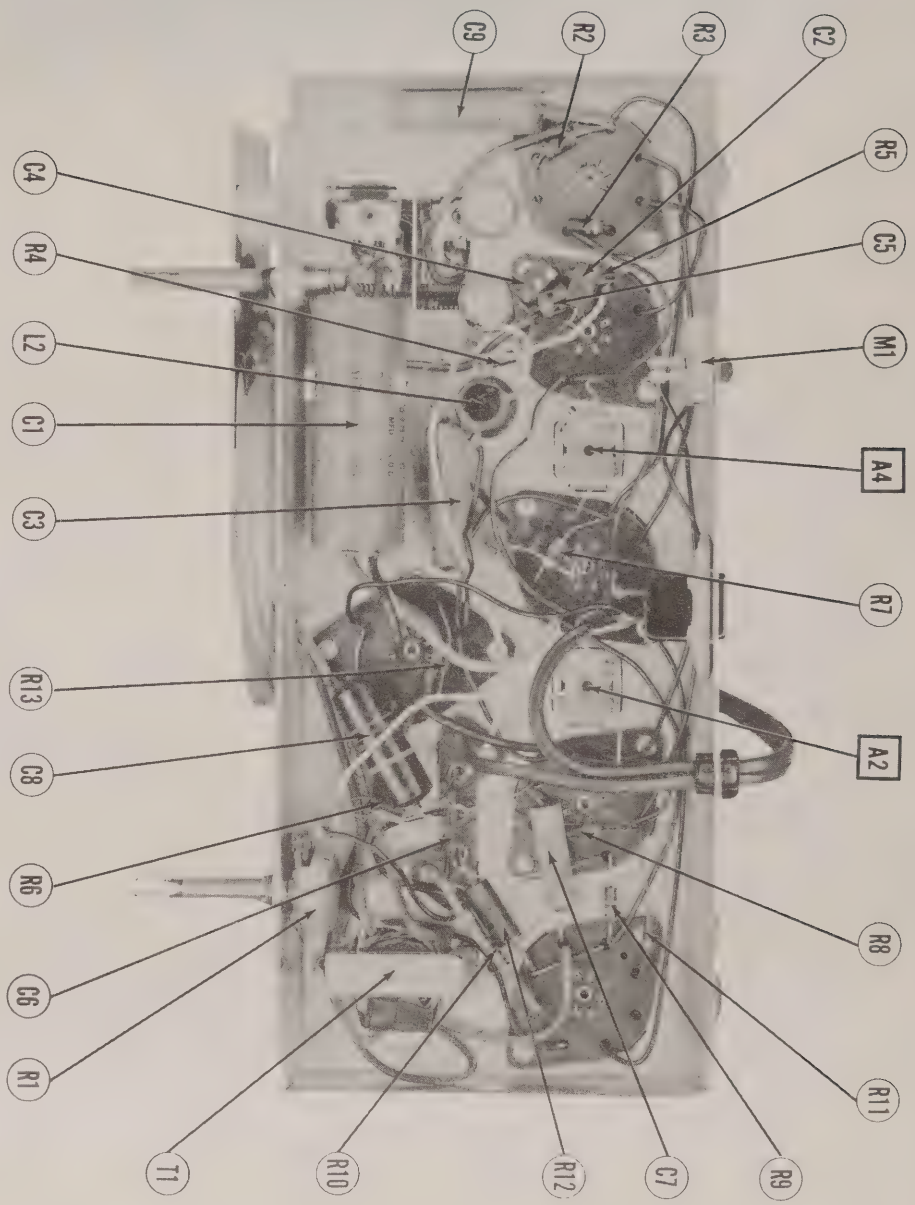
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	General Electric PART No.		
L1	Loop Ant.	3.1Ω		RAB-157		Includes Back Cover
L2	Osc. Coil	.6Ω	6.5Ω	RLC-110		
L3	1st. IF	21Ω	21Ω	RTL-117		
L4	2nd. IF	21Ω	21Ω	RTL-117		

MISCELLANEOUS

ITEM No.	PART NAME	General Electric PART No.	NOTES
M1	Switch	RSW-067	Radio On-Off
M2	2 Gang Var. Cap.	RCT-050	(27-477MMF., 12-157MMF.)
	Cabinet	RQU-347	
	Dial Pointer	RDP-059	
	Dial Scale	RDS-104	
	Knob	RDK-243	Volume, Tuning



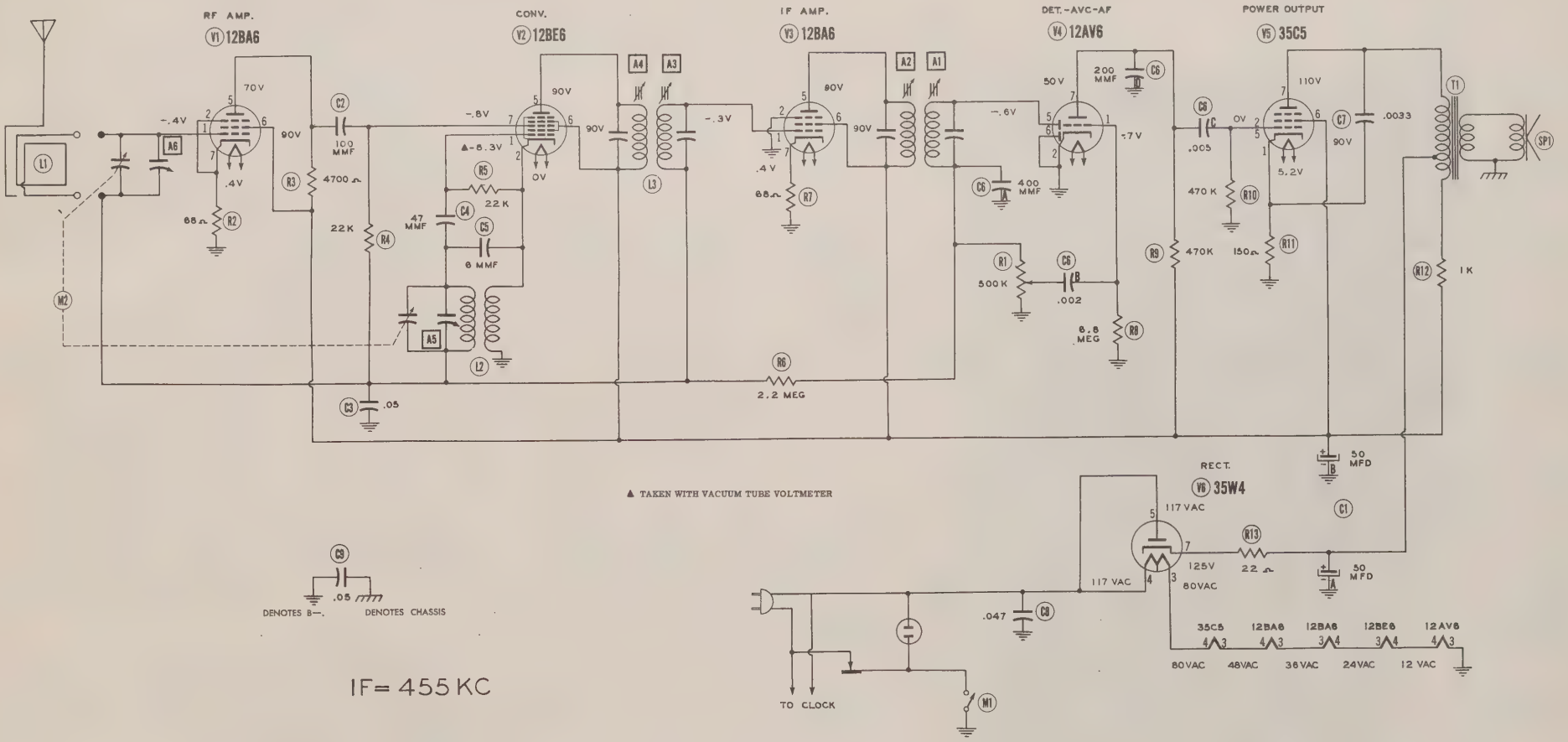
CHASSIS—BOTTOM VIEW



SET 151 FOLDER 7

GENERAL ELECTRIC MODEL 535

GENERAL ELECTRIC MODEL 535



▲ TAKEN WITH VACUUM TUBE VOLTMETER

DENOTES B—. DENOTES CHASSIS

IF= 455 KC

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	12BA6	2.7Meg	0Ω	36Ω	24Ω	†5.7KΩ	†1KΩ	68Ω
V 2	12BE6	22KΩ	.6Ω	24Ω	12Ω	†1KΩ	†1KΩ	2.7Meg
V 3	12BA6	2.7Meg	0Ω	36Ω	48Ω	†1KΩ	†1KΩ	68Ω
V 4	12AV6	6.8Meg	0Ω	0Ω	12Ω	500KΩ	0Ω	†470KΩ
V 5	35C5	150Ω	470KΩ	48Ω	83Ω	470KΩ	†1KΩ	†260Ω
V 6	35W4	Inf.	†22Ω	83Ω	118Ω	118Ω	100Ω	50KΩ

† MEASURED FROM PIN 7 OF V6

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1951

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

MASCO
MODELS ME-18, ME-18P

MASCO
MODELS ME-18, ME-18P

MASCO
MODELS ME-18, ME-18P

MASCO MODEL ME-18P

TRADE NAME	Masco, Models ME-18, ME-18P
MANUFACTURER	Mark Simpson Mfg. Co., Inc., 32-28 49th. St., Long Island City, New York
TYPE SET	AC Operated Audio Amplifier (Model ME-18P has Phono Player)
TUBES (FIVE)	Types 6SJ7 Mic Pre-Amp., 6SC7 AF Amp.-Phase Inverter, (2)6L6G Power Output, 5Y3GT Rectifier
POWER SUPPLY	110-120 Volts AC RATING .95Amp. at 117Volts AC

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MASCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	Mic-Pre-Amp.	6SJ7	6SJ7	8N	
V2	AF Amplifier-Phase Inverter	6SC7	6SC7	8S	
V3	Power Output	6L6G	6L6G	7AC	
V4	Power Output	6L6G	6L6G	7AC	
V5	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MASCO PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1	16	450		PRS450/16		BR1645A		TVA-1708	Filter
C2A	10	450		AFH3-31		UP1145		TVL-3776	▲ Decoupling
B	10	450							■ Decoupling
C	10	450							▲ Decoupling
C3	10	50		PRS50/10		BR105		TVA-1304	Power Output Cathode
C4	.0047	600		P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Audio Coupling †
C5	.1	600		P688-1	DF-104	PTE6P1		6TM-P1	Mic Pre-Amp. Screen
C6	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C7	.0047	600		P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Tone Comp. †
C8	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C9	.01	600		P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Audio Coupling
C10	.1	600		P688-1	DF-104	PTE6P1		6TM-P1	Line Filter

† Some models use .005MFD. in this application.

CONTROLS

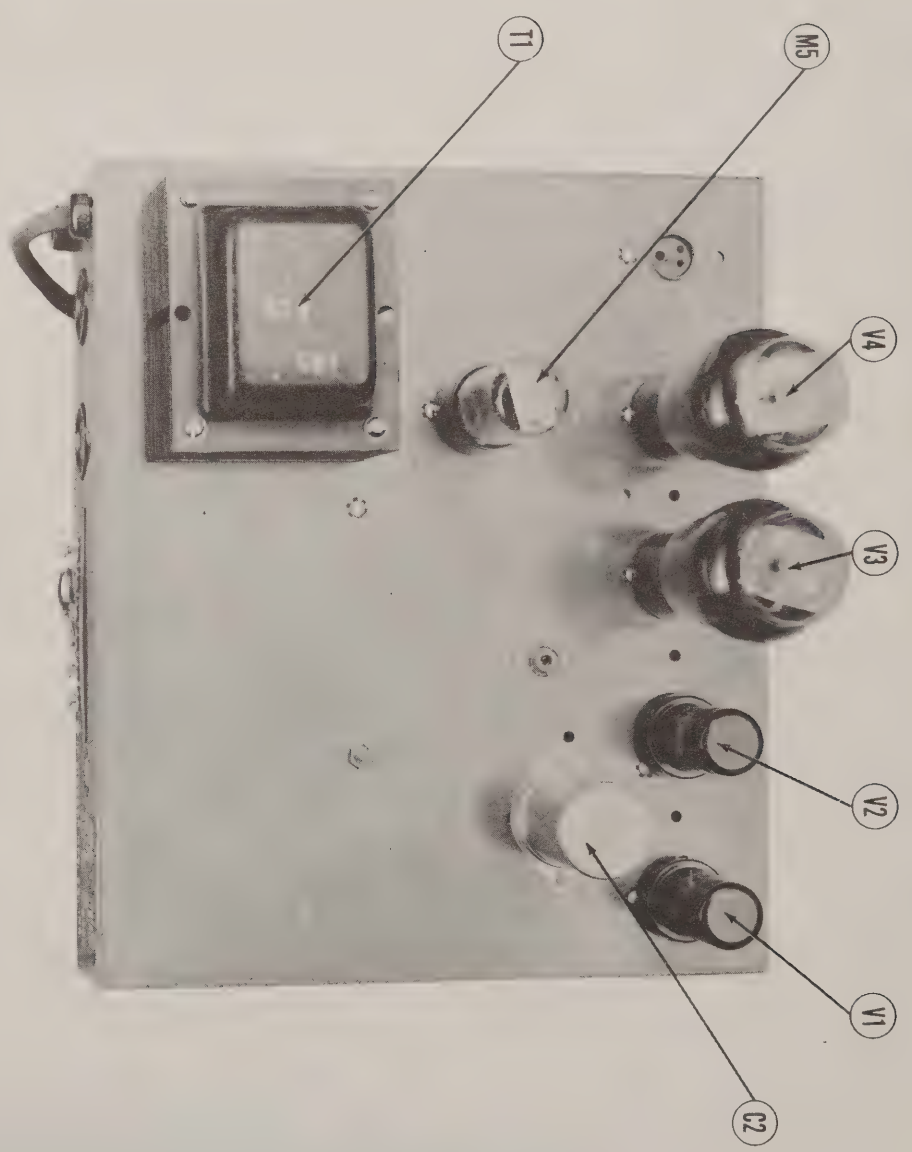
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MASCO PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	33-010-188	Q13-133	AG-60-Z	B-60	Mike Volume Control
B	Shaft		Not req.	Not req.	RS-2	Not req.	Attach to R1A per instructions
R2A	500KΩ	½	34-011-182	Q13-133	AG-60-Z	B-60-S	Phono Volume Control
B	Shaft		Not req.	Not req.	RS-2	Not req.	Attach to R2A per instructions
C	Switch		Not req.	76-1	SWB	Not req.	Attach to R2A per instructions
R3A	500KΩ	½		Q13-133	AG-60-Z	B-60-S	Tone Control
B	Shaft			Not req.	RS-2	Not req.	Attach to R3A per instructions
C	Switch			76-1	SWB	Not req.	Attach to R3A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MASCO PART No.	IRC PART No.	IDENTIFICATION CODES
R4	15Meg	½		BTS-15Meg	Mike Pre-Amp. Grid
R5	2.7Meg	½		BTS-2.7Meg	Mike Pre-Amp. Screen-See Note 1
R6	390KΩ	½		BTS-390K	Mike Pre-Amp. Plate - See Note 2
R7	100KΩ	½		BTS-100K	Mike Pre-Amp. Decoupling
R8	1000Ω	½		BTS-1000	AF Amp. - Phase Inv. Cathode
R9	270KΩ	½		BTS-270K	AF Amp. Plate
R10	270KΩ	½		BTS-270K	Phase Inv. Plate
R11	8200Ω	½		BTS-8200	Phase Inv. Grid
R12	390KΩ	½		BTS-390K	Output Grid - See Note 2
R13	390KΩ	½		BTS-390K	Output Grid - See Note 2
R14	200Ω	10		1 3/4A-200	Output Cathode - Wire Wound
R15	5000Ω	1		BTA-4700	Filter
R16	12KΩ	½		BTS-12K	Decoupling

Note 1 Some models use 3Meg resistor in this application.
Note 2 Some models use 500KΩ resistor in this application.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	MASCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC .95A	640VCT .115ADC	5VAC ⓐ 2A	6.3VAC ⓐ 2.5A	A-17	PM8410 ①	P-2953	PV-100 ②

① Add series resistor to reduce plate voltage if necessary.
② Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MASCO PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	3KΩ CT	2Ω 2Ω 8Ω 15Ω 500Ω	110Ω CT	.2Ω .3Ω .35Ω .45Ω 24Ω	0-17A				

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA				REMARKS
			MASCO PART No.		LITTELFUSE PART No.		
			FUSE	HOLDER	FUSE	HOLDER	
M1	3AG	3A			313003	341001	

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA								REMARKS
	MASCO PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M2		L-71-A 510-QT*		W58A		12 2400*	O-3 or S-3	* Complete arm and cartridge assembly.

ELECTRO-VOICE NEEDLE LISTING SHOWN ABOVE IS SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGE LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENT SEE BELOW.

PHONO NEEDLE

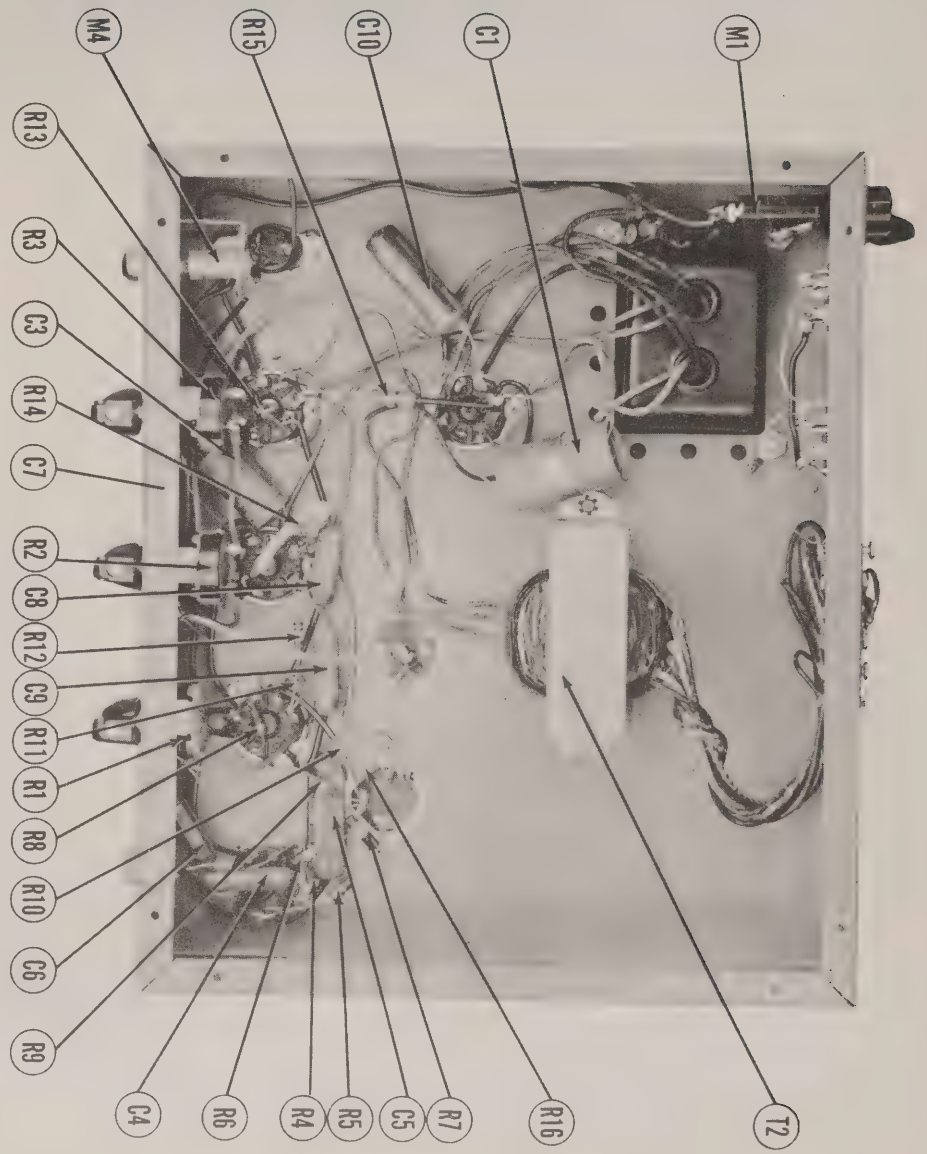
(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

ITEM No.	REPLACEMENT DATA		REMARKS
	MASCO PART No.	WALCO PART No.	
M3			

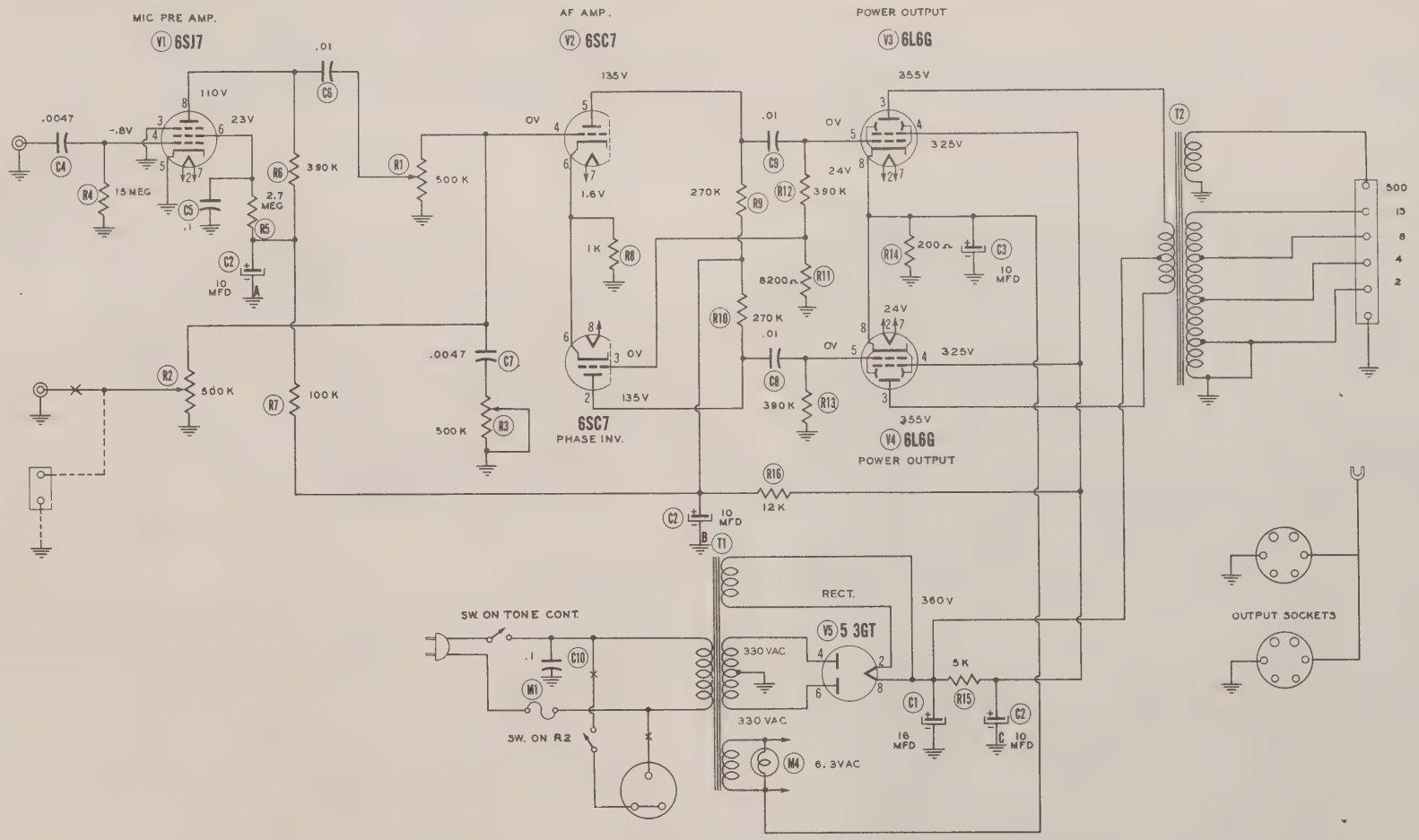
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					MASCO PART No.		
M4	Bayonet	6-8	.15	Brown			Type # 47

CHASSIS—BOTTOM VIEW



SET 151
FOLDER 8



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SJ7	0Ω	¶0Ω	0Ω	15Meg	0Ω	†2.8Meg	¶.1Ω	†500KΩ
V 2	6SC7	0Ω	†285KΩ	8.2KΩ	250KΩ	†280KΩ	1KΩ	¶.1Ω	¶0Ω
V 3	6L6G	0Ω	¶0Ω	†55Ω	†5KΩ	400KΩ	Inf.	¶.1Ω	200Ω
V 4	6L6G	0Ω	¶0Ω	†55Ω	†5KΩ	400KΩ	Inf.	¶.1Ω	200Ω
V 5	5Y3GT	Inf.	40KΩ	Inf.	49Ω	Inf.	52Ω	Inf.	40KΩ

† MEASURED FROM PIN 8 OF V5
¶ MEASURED FROM PIN 2 OF V4

THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1951

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

OLYMPIC
MODEL 51-421W

OLYMPIC
MODEL 51-421W

TRADE NAME	Olympic, Model 51-421W
MANUFACTURER	Olympic Radio and Television Inc., 34-01 38th Ave., Long Island City, New York
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 12SA7 Converter, 12SK7 IF Amp., 12SQ7 DET.-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	105-125 Volts AC-DC RATING .275Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	535-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer parallel with base of dial. Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side on signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD.	High side to stator on rear section of tuning gang. Low side to B-.	455KC (400~ Mod.)	Tuning gang fully open.	Across Voice Coil.	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD. to reduce hum modulation.
2.		Loop	1500KC	1500KC	"	A5, A6	Fashion loop of several turns of wire a and radiate signal into loop of receiver. Adjust for maximum output.

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: OLYMPIC PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12SA7	12SA7	8R	
V2	IF Amplifier	12SK7	12SK7	8N	
V3	DET.-AVC-AF	12SQ7	12SQ7	8Q	
V4	Power Output	50L6GT	50L6GT	7AC	
V5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: OLYMPIC PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150	CO-1715	AFH2-14		UP4415		TVL-2428	■ Filter
B	40	150							▲ Filter
C2	.02	600	CO-H-6203	P688-02	DF-203	PTE6S2		6TM-S2	AVC Filter
C3A	150		♦PC-2478	SI150	♦PC-51	5W5T15	GP2K-151	♦100C1	Diode RF Filter
B	150			SI150		5W5T15	GP2K-151		Diode RF Filter
C4A	220		‡PC-2477	SI220	‡PC-150	5W5T25	GP2K-221	5GA-T22	Diode RF Filter
B	.002			P688-002		PTE6D2	GP2-333-202	6TM-D2	Audio Coupling
C	.005			P688-005		PTE6D5	GP2-333-502	6TM-D5	Audio Coupling
D	220			SI220		5W5T25	GP2K-221	5GA-T22	AF Amp. Plate
C5	.01	600	CO-H-6103	P688-01	D6-103	PTE6S1	GP2-333-103	6TM-S1	Power Output Plate *
C6	.05	400	CO-H-4503	P488-05	DF-503	PTE4S5		4TM-S5	Line Filter
C7	.1	400	CO-H-4104	P488-1	DF-104	PTE4P1		4TM-P1	Line Isolation †

* Not used in all models.
♦ Items C3A, C3B, R4 are combined in one unit.
‡ Items C4A, C4B, C4C, C4D, R5A, R5B, R5C are combined in one unit.
† When replacing C7, rewind 12 turns of #20 insulated wire on replacement.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: OLYMPIC PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	PT-102	Q13-133	AG-60-Z	BSK-60-S	Volume Control
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R1A per instructions
C	Switch		Not req.	76-1	SWB	Not req.	Attach to R1A per instructions

RESISTORS

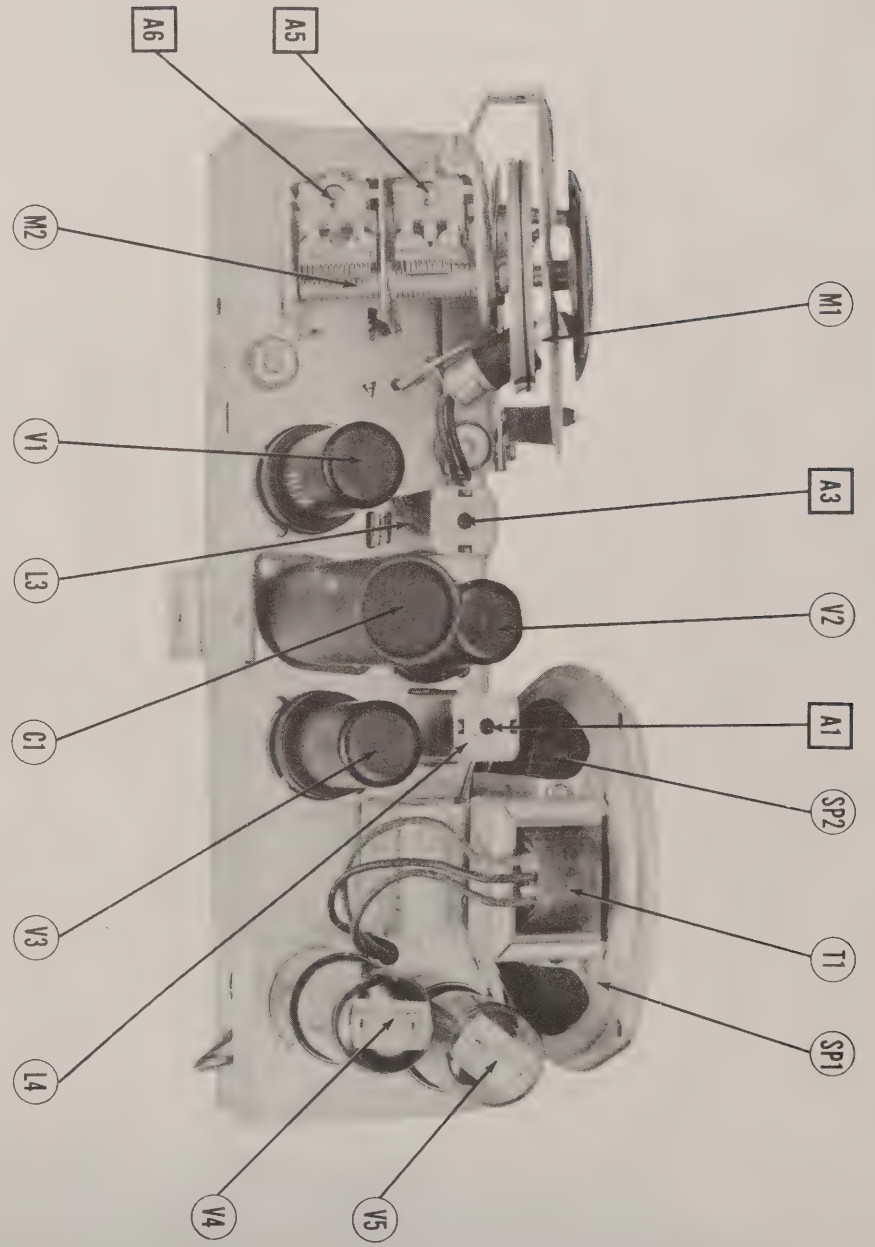
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: OLYMPIC PART No.	IRC PART No.	IDENTIFICATION CODES
R2	22KΩ	½	REB-223M	BTS-22K	Osc. Grid
R3	2.7Meg	½		BTS-2.7Meg	AVC Network - See Note
R4	47KΩ	½	♦PC-2478	BTS-47K	Diode RF Filter
R5A	6.8Meg	½		BTS-6.8Meg	AF Amp. Grid
B	470KΩ	½	‡PC-2477	BTS-470K	AF Amp. Plate
C	470KΩ	½		BTS-470K	Output Grid
R6	150Ω	1	REB-151K	BTS-150	Output Cathode
R7	1000Ω	2	RED-102M	BTB-1000	Decoupling
R8	220KΩ	½	REB-224M	BTS-220K	Isolation
R9	220Ω	1	REC-221K	BTA-220	Pilot Light Shunt

♦ Items R4, C3A, C3B are combined in one unit.
‡ Items R5A, R5B, R5C, C4A, C4B, C4C, C4D are combined in one unit.
Note Some models use 2.2Meg resistor in this application.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: OLYMPIC PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T1	1.9KΩ	3.5Ω	170Ω Tap 6Ω	.5Ω	Part of SK838-1	A-3330	A-3031	RO-3	

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			OLYMPIC PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V. C. IMP.	SK838-1	ST105 Model P5-X	5A1	
	PM	3.5Ω				
	CONE DIA.	V. C. DIA.				
SP2	4½"	9/16"				

R F COILS

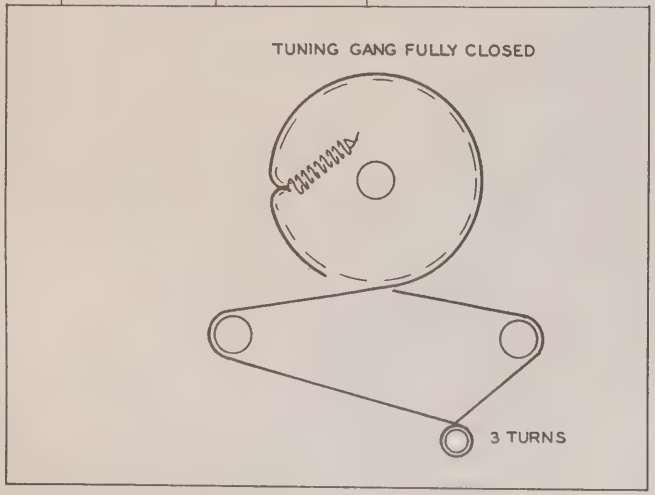
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	OLYMPIC PART No.		
L1	Loop Ant.	1.8Ω		LP-163-2		
L2	Osc. Coil	.3Ω	4Ω	CL-869		
L3	1st. IF	17Ω	16Ω	TR-1644		
L4	2nd. IF	16Ω	17Ω	TR-1644		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					OLYMPIC PART No.		
M1	Bayonet	6-8	.15	Brown	BU-187		Type # 47

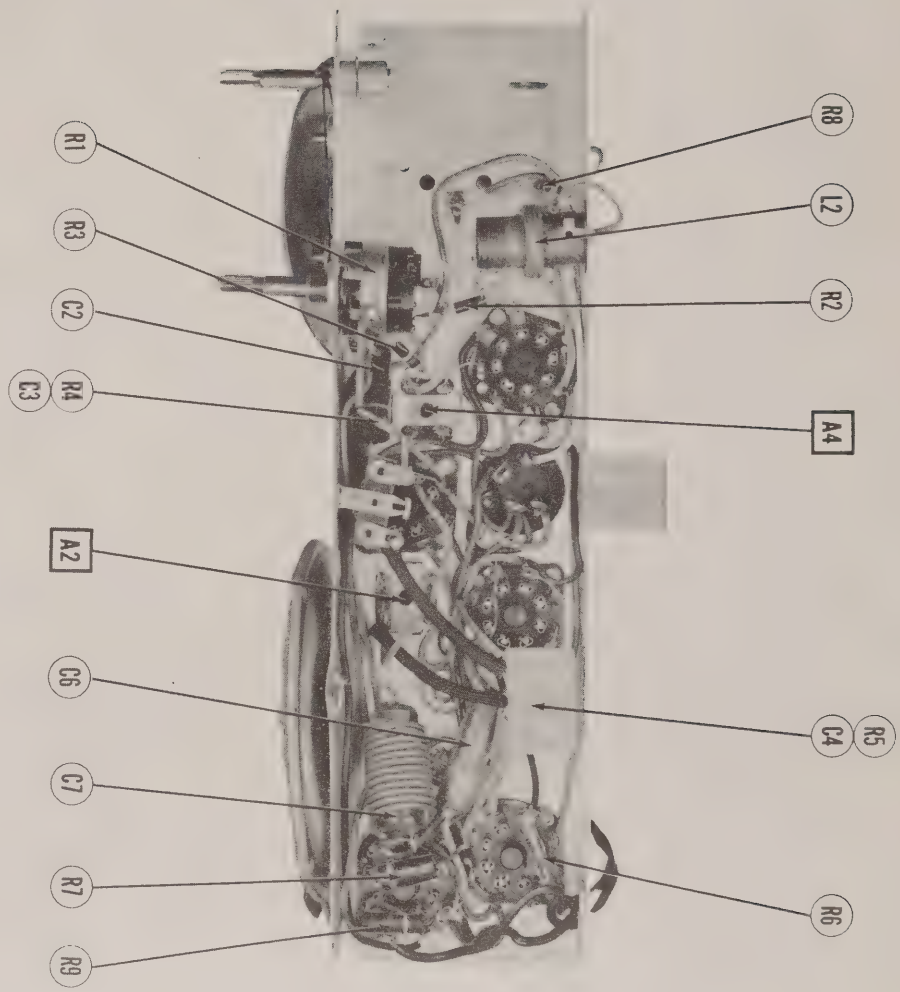
MISCELLANEOUS

ITEM No.	PART NAME	OLYMPIC PART No.	NOTES
M2	2 Gang Var. Cap	CV-801	(21-452MMF , 30-200MMF.)
	Cabinet	CA-327W	
	Dial	DL-2483	
	Knob	KN-352	
	Dial Pointer	PO-259W	

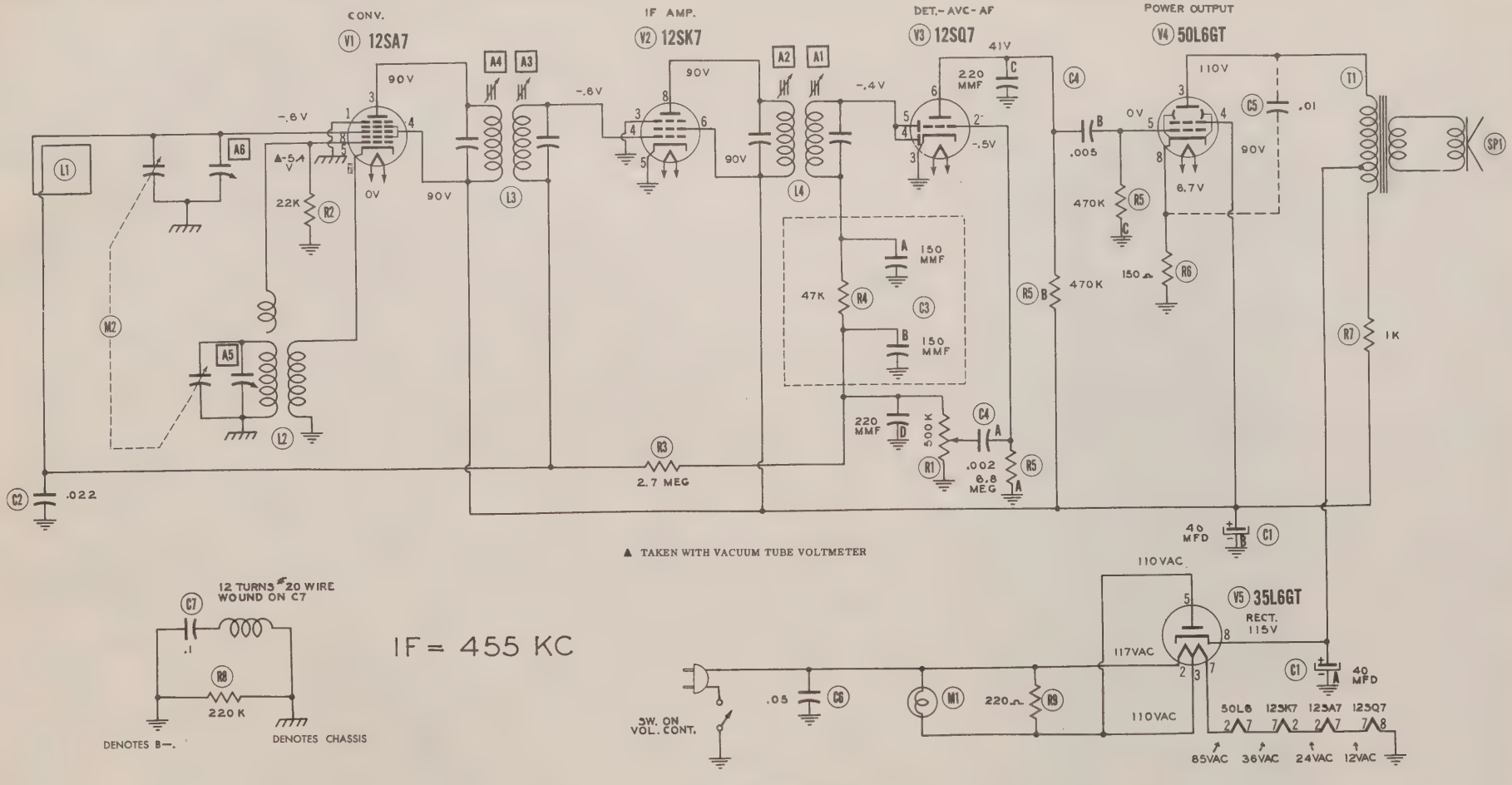


DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



OLYMPIC MODEL 51-421W



▲ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7	220KΩ	24Ω	†1KΩ	†1KΩ	22KΩ	.3Ω	12Ω	3.2Meg
V 2	12SK7	220KΩ	24Ω	0Ω	3.2Meg	0Ω	†1KΩ	36Ω	†1KΩ
V 3	12SQ7	220KΩ	6.8Meg	0Ω	550KΩ	550KΩ	†470KΩ	12Ω	0Ω
V 4	50L6GT	Inf.	85Ω	†165Ω	†1KΩ	470KΩ	0Ω	36Ω	150Ω
V 5	35Z5GT	Inf.	117Ω	110Ω	0Ω	110Ω	†6Ω	85Ω	250KΩ

† MEASURED FROM PIN 8 OF V5

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

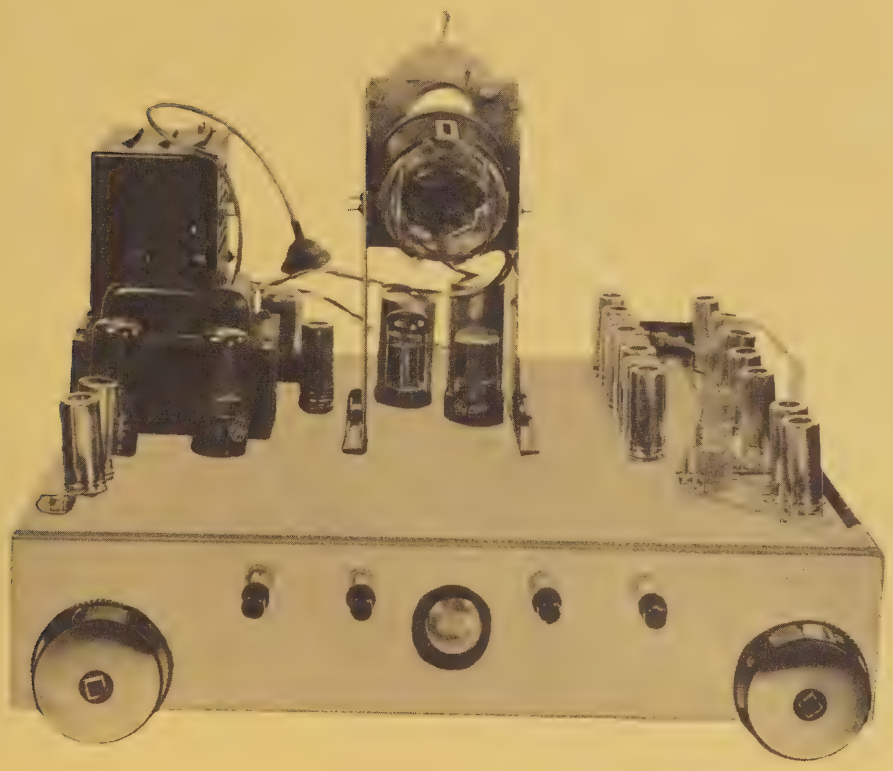
© Howard W. Sams & Co., Inc. 1951

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

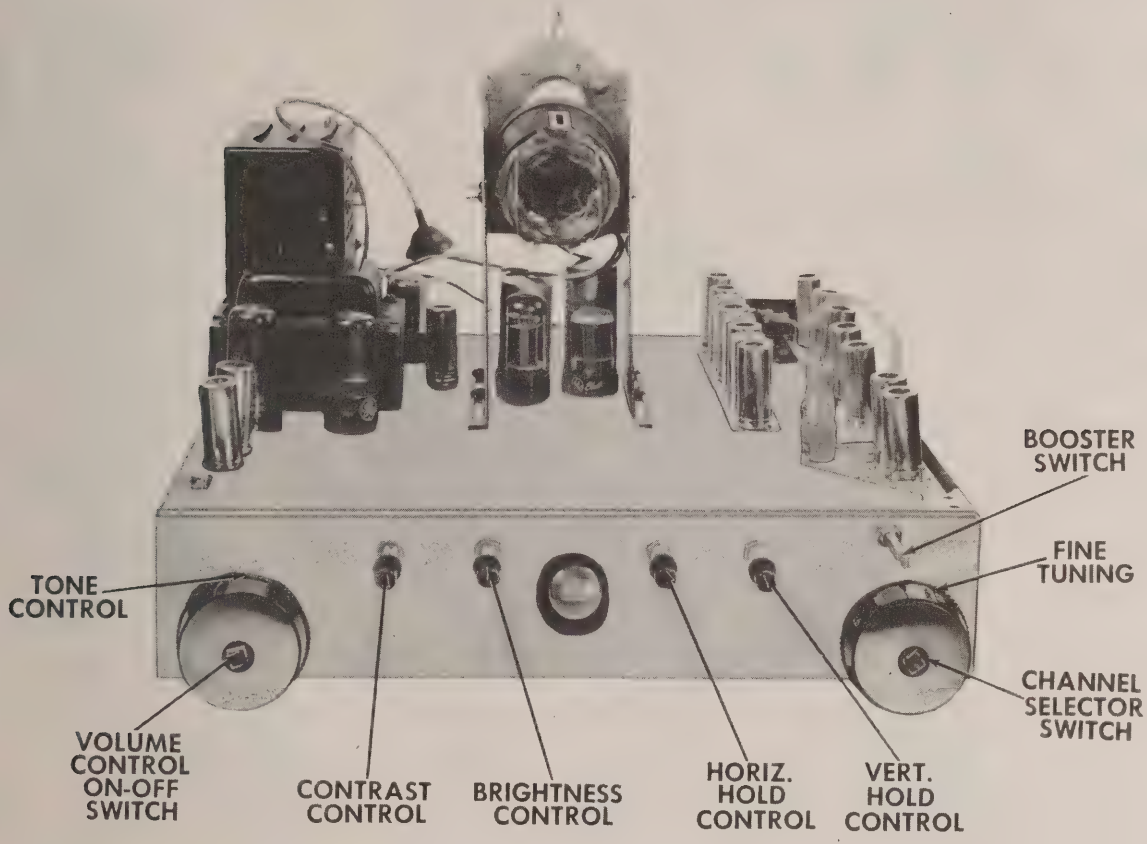


RADIO CRAFTSMEN
MODEL RC201

HOWARD W. SAMS & CO., INC. • Indianapolis, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 11-51 SET 151 FOLDER 10



RADIO CRAFTSMEN
MODEL RC201

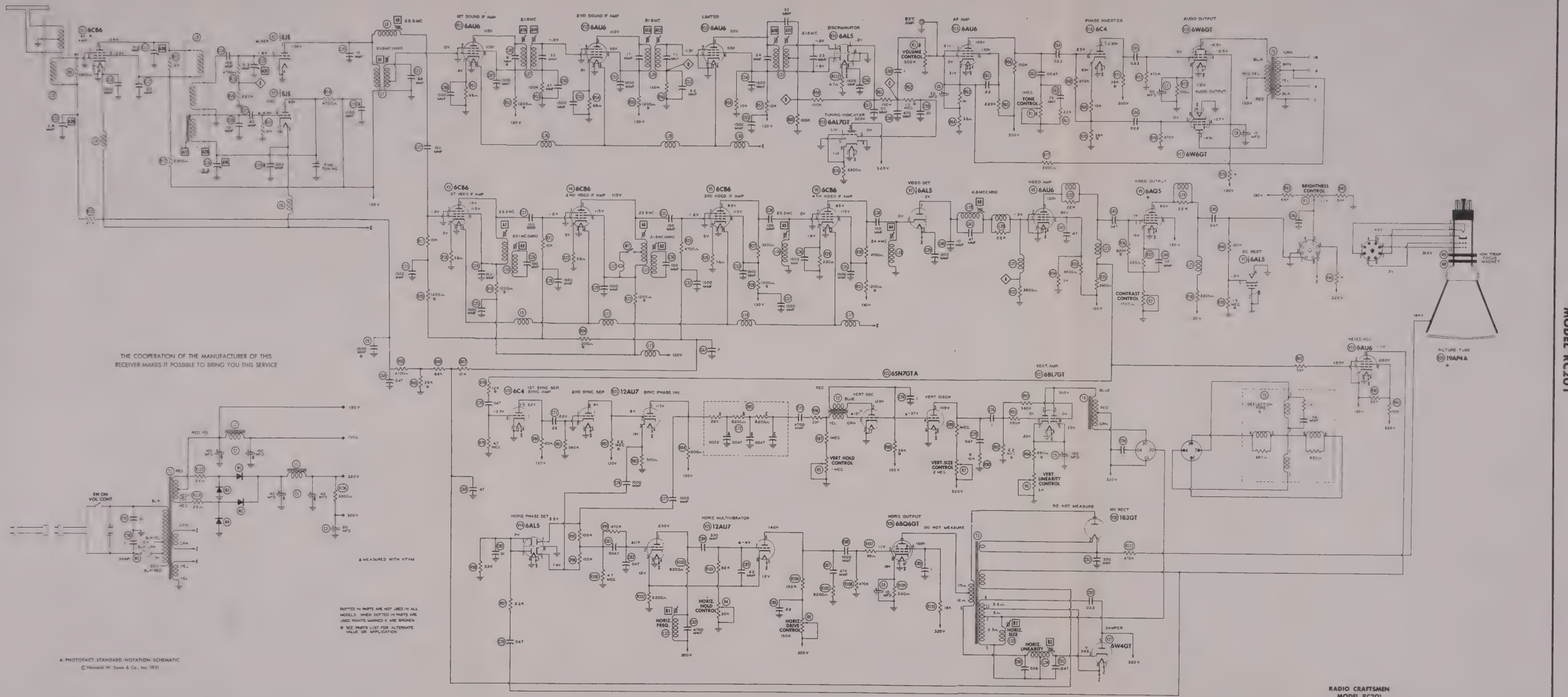
TRADE NAME	Radio Craftsmen Chassis RC201
MANUFACTURER	Radio Craftsmen Inc., 4401 Ravenswood Ave., Chicago, Ill.
TYPE SET	Television Receiver
TUBES	Twenty nine
POWER SUPPLY	110-120 Volts AC - 60 Cycle — RATING 1.9 Amp. at 117 Volts AC
TUNING RANGE—CHANNELS	2 thru 13

INDEX

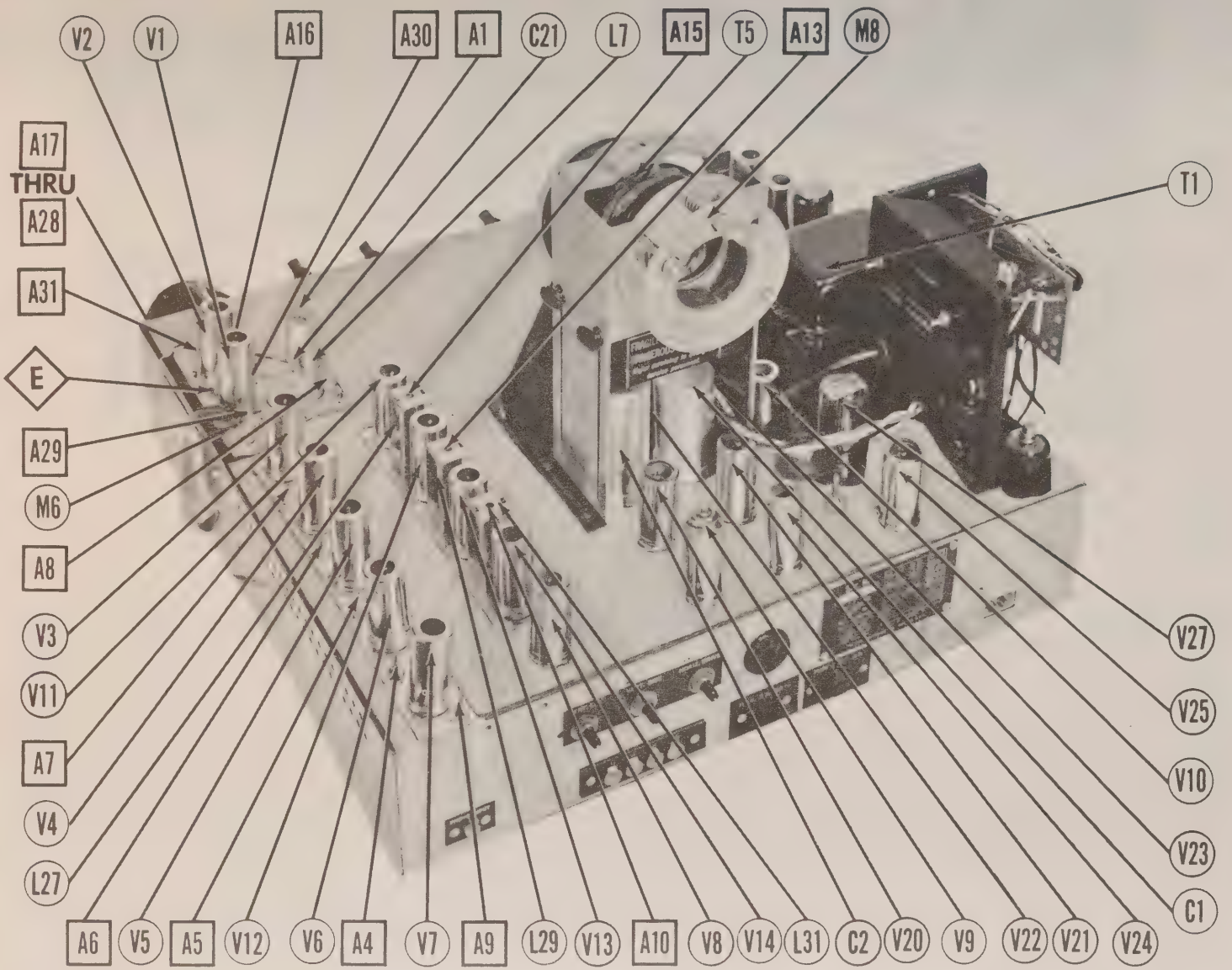
Alignment Instructions 6, 7
Horizontal Sweep Circuit Adjustments 7
Parts List and Description 12, 13, 15
Photographs
Capacitor and Alignment Identification 4, 9
Chassis - Rear View 8
Chassis - Top View 3
Photographs (Cont.)
RF Tuner 10
Resistor and Inductor Identification 11, 14
Resistance Measurements 8
Schematic 2
Tube Placement Charts 5

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

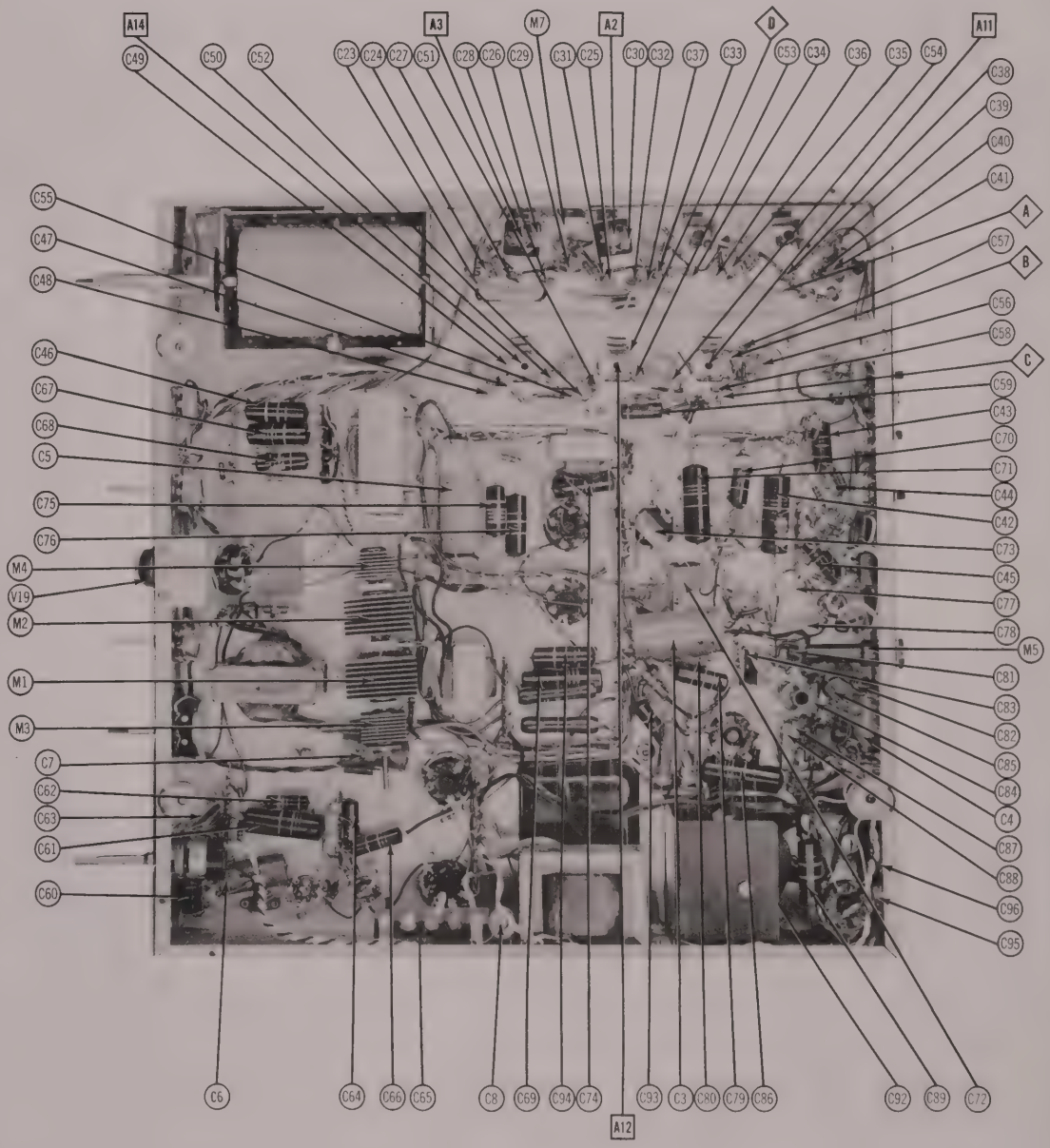
"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America


THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
SW ON VOL CONT
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1951
RADIO CRAFTSMEN MODEL RC201

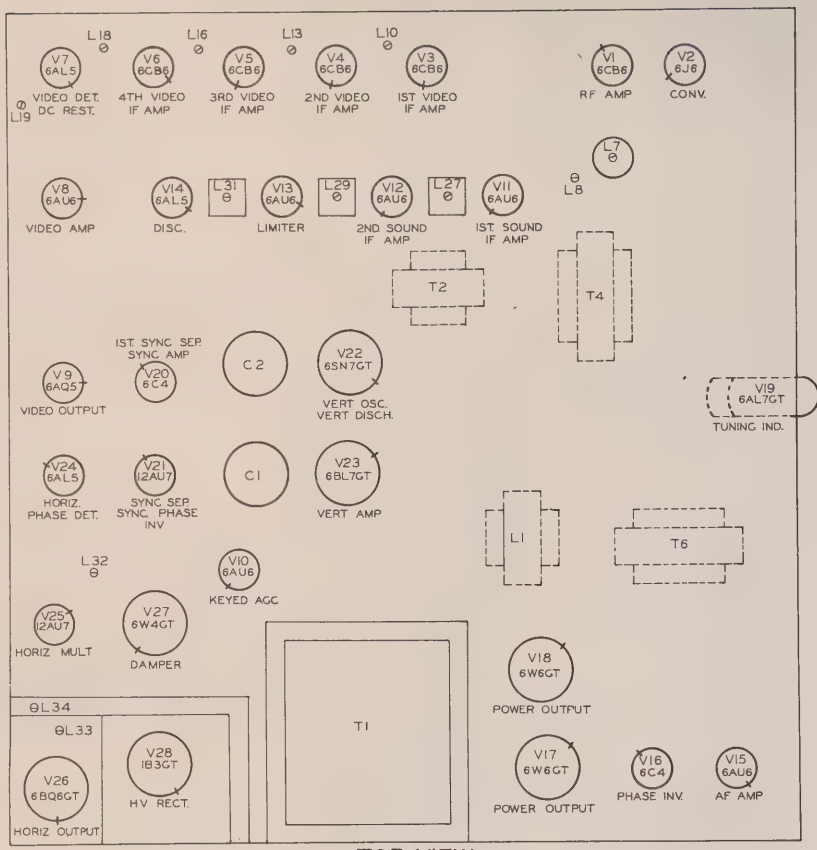
RADIO CRAFTSMEN
MODEL RC201



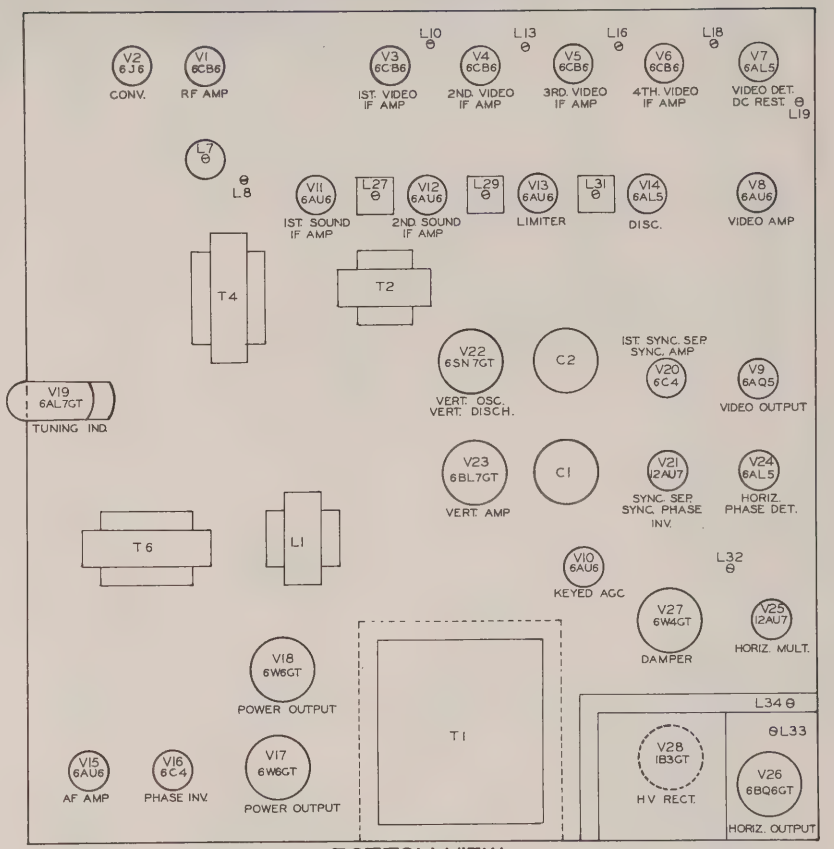
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

RADIO CRAFTSMEN
MODEL RC201

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube, (V25) from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube, (V2), and replace it with a 6J6 which has pin 1 removed, this will disable the local oscillator and prevent the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded lead of C69, connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	21.6MC (unmod.)	Any	DC probe to Point (A). Common to chassis.	A1, A2	Adjust for MINIMUM deflection.
2.	"	"	20.1MC	"	"	A3	"
3.	"	"	24.4MC	"	"	A4	Adjust for maximum deflection.
4.	"	"	25.5MC	"	"	A5	"
5.	"	"	22.9MC	"	"	A6	"
6.	"	"	25.3MC	"	"	A7	"
7.	"	"	22.6MC	"	"	A8	"
8.	.001MFD.	High side to pin 1, (Grid) of 6CB6, (V6). Low side to chassis.	4.5MC	"	"	A9	Adjust for MINIMUM deflection.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	24MC (10MC SWP)	21.6MC 26.1MC	Any	Vert. Amp. to Point (A). Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A4 thru A8 for proper response. Actuate booster switch and check for response shown in figure 1. The boost coil L12 may be expanded or compressed to adjust the boosted response. Do not change any IF adjustment.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	.001MFD	High side to pin 1, (Grid) of 6AU6, (V11). Low side to chassis.	21.6MC	Any	DC probe to Point (B). Common to chassis.	A10	Adjust for maximum deflection.
11.	"	"	"	"	DC probe to Point (C). Common to chassis.	A11	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
12.	"	"	"	"	DC probe to Point (D). Common to chassis.	A12, A13, A14, A15	Adjust for maximum deflection.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	.001MFD.	High side to pin 1, (Grid) of 6AU6, (V11). Low side to chassis.	21.6MC (450KC SWP)	21.6MC	Any	Vert. Amp. thru 47KΩ to Point (D). Low side to chassis.	A12, A13 A14, A15	Adjust for maximum amplitude and symmetry amplitude and symmetry as per figure 2.
11.	"	"	"	"	"	Vert. Amp. to Point (B). Low side to chassis.	A10	"
12.	"	"	"	"	"	Vert. Amp. thru 47KΩ to Point (C). Low side to chassis.	A11	Adjust A11 so 21.6MC occurs at center of crossover lines as per figure 3. Retouch A10 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
The signal generator output lead should be terminated with tis characteristic impedance, usually 50 ohms.
Complete oscillator alignment may not be necessary. If the oscillator seems to be off frequency approximately the same amount for a majority of the channels it may be possible to correct them in one step using A16. It should be noted that this is an all channel oscillator circuit adjustment and should not be adjusted for any individual channel. If adjustment of A16 will not bring all channels within the range of the fine tuning control, it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
13.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	215.75MC (unmod.)	13	DC probe to Point (C). Common to chassis.	A17	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
			209.75MC	12		A18	
			203.75MC	11		A19	
			197.75MC	10		A20	
			191.75MC	9		A21	
			185.75MC	8		A22	
			179.75MC	7		A23	
			87.75MC	6		A24	
			81.75MC	5		A25	
			71.75MC	4		A26	
			65.75MC	3		A27	
			59.75MC	2		A28	

ALIGNMENT INSTRUCTIONS (CONT.)

RF AND MIXER ALIGNMENT

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
14.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	207MC (10MC SWP)	205.25MC 209.75MC	12	Vert. Amp. thru 10KΩ to Point (E). Low side to chassis.	A29, A30, A31	Adjust for response curve similar to figure 4, with markers above 90%.
15.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13	"		Check all channels for response curve similar to figure 4. If markers fall below 70% on any channel make slight adjustment of A29, A30, and A31 with channel switch set at that channel. Recheck all channels to see that they have not been seriously effected.
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
			85MC (10MC SWP)	83.25MC 87.75MC	6			
			79MC (10MC SWP)	77.25MC 81.75MC	5			
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

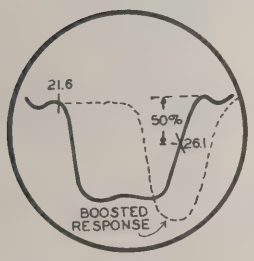


FIG. 1

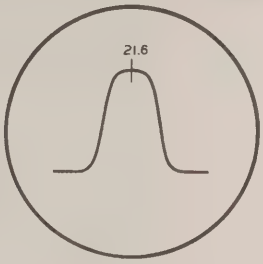


FIG. 2

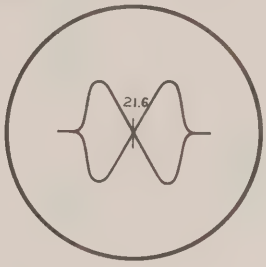


FIG. 3

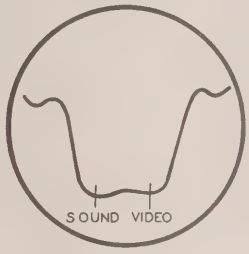


FIG. 4

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune a TV station, preferably a test pattern.

Turn the horizontal hold control to the mid-position of its range.

Adjust the horizontal frequency slug, (B1), until the picture synchronizes horizontally.

Turn the horizontal drive control clockwise until crowding or bright vertical lines appear in the picture, then counter-clockwise just enough to remove the overdrive conditions.

Adjust the horizontal size slug, (B2), until the picture is slightly wider than necessary to fill the mask horizontally.

Adjust the horizontal linearity slug, (B3), until the picture is symmetrical from left to right.

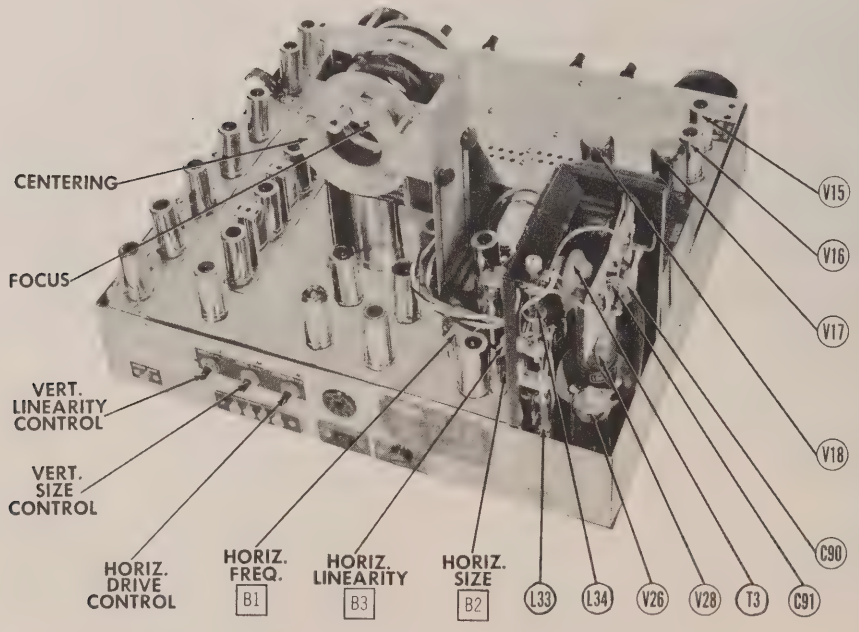
Since both width and horizontal linearity are effected by the horizontal drive control it may be necessary to adjust them alternately for optimum results.

RESISTANCE MEASUREMENTS

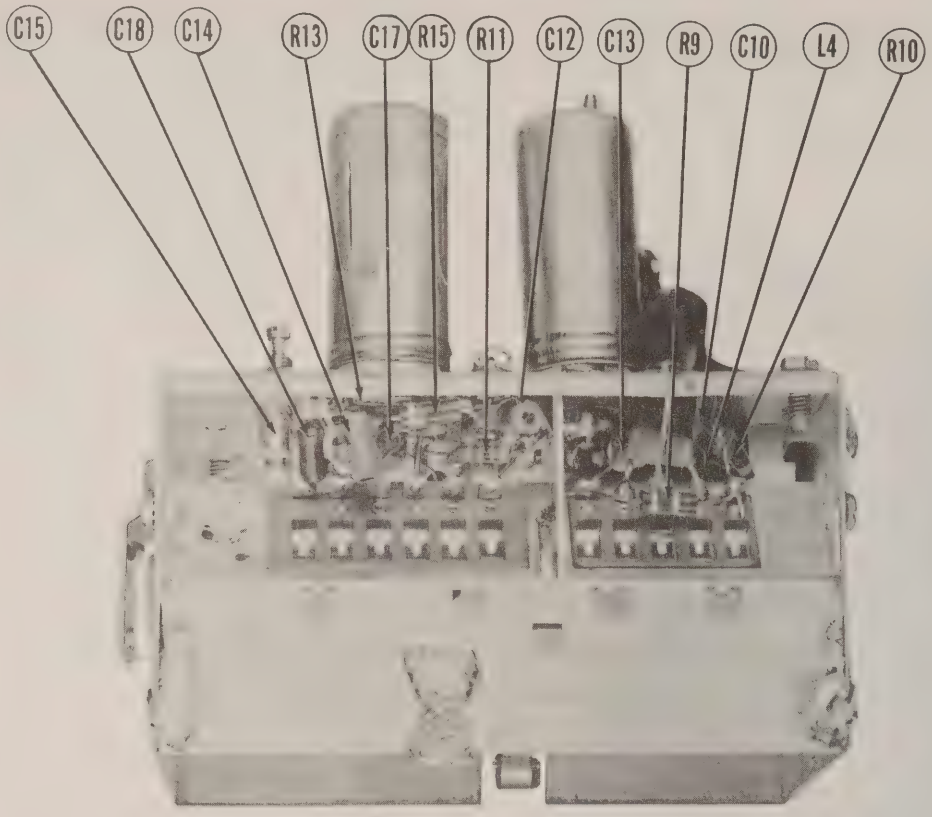
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	100KΩ	0Ω	.1Ω	0Ω	▲2.3KΩ	▲2.3KΩ	0Ω		
V 2	6J6	▲4.8KΩ	▲140Ω	.1Ω	0Ω	220KΩ	10KΩ	0Ω		
V 3	6CB6	135KΩ	56Ω	0Ω	.1Ω	▲1.3KΩ	▲1.3KΩ	0Ω		
V 4	6CB6	135KΩ	56Ω	0Ω	.1Ω	▲1.3KΩ	▲1.3KΩ	0Ω		
V 5	6CB6	130KΩ	56Ω	0Ω	.1Ω	▲4.6KΩ	▲1.3KΩ	0Ω		
V 6	6CB6	.1Ω	220Ω	.1Ω	0Ω	▲6KΩ	▲1.3KΩ	0Ω		
V 7	6AL5	.1Ω	0Ω	.1Ω	0Ω	1.5Meg	0Ω	3.9KΩ		
V 8	6AU6	3.9KΩ	0Ω	0Ω	.1Ω	▲4KΩ	▲5.5KΩ	0Ω		
V 9	6AQ5	1Meg	1.7KΩ 220Ω	0Ω	.1Ω	▲3.4KΩ	▲140Ω	1Meg		
V 10	6AU6	▲37KΩ	▲140Ω	0Ω	.1Ω	115KΩ	†10KΩ	▲140Ω		
V 11	6AU6	0Ω	0Ω	0Ω	.1Ω	▲1.3KΩ	▲1.3KΩ	68Ω		
V 12	6AU6	100KΩ	0Ω	0Ω	.1Ω	▲1.3KΩ	▲1.3KΩ	68Ω		
V 13	6AU6	150KΩ	0Ω	0Ω	.1Ω	▲5KΩ	▲5KΩ	0Ω		
V 14	6AL5	200KΩ	100KΩ	.1Ω	2.2Ω	0Ω	0Ω	100KΩ		
V 15	6AU6	0Ω	1KΩ	0Ω	.1Ω	†100KΩ	†220KΩ	1KΩ		
V 16	6C4	†42KΩ	Inf.	.1Ω	0Ω	†42KΩ	510KΩ	49KΩ		
V 17	6W6GT	Inf.	.1Ω	▲85Ω	▲1.1KΩ	470KΩ	Inf.	0Ω	100Ω	
V 18	6W6GT	Inf.	.1Ω	▲85Ω	▲1.1KΩ	470KΩ	Inf.	0Ω	100Ω	
V 19	6AL7GT	3.3KΩ	.1Ω	†47Ω	0Ω	0Ω	1.8Meg	0Ω	3.3KΩ	
V 20	6C4	▲100KΩ	Inf.	0Ω	.1Ω	▲100KΩ	4.7Meg	0Ω		
V 21	12AU7	▲1.6KΩ	▲2.2Meg	1.5KΩ	.1Ω	.1Ω	▲2.2Meg	0Ω	560KΩ	0Ω
V 22	6SN7GT	2Meg 1Meg	▲40KΩ	0Ω	2Meg 1Meg	†3Meg †1Meg	0Ω	0Ω	.1Ω	
V 23	6BL7GT	2.8Meg	†1.2KΩ	5.6KΩ 680Ω	2.8Meg	†1.2KΩ	5.6KΩ 680Ω	0Ω	.1Ω	
V 24	6AL5	33KΩ	33KΩ	.1Ω	0Ω	4.8Meg	0Ω	4.8Meg		
V 25	12AU7	†11KΩ	5.1Meg	2.2KΩ	.1Ω	.1Ω	†300KΩ †150KΩ	130KΩ 82KΩ	2.2KΩ	0Ω
V 26	6BQ6GT	Inf.	0Ω	Inf.	†18KΩ	470KΩ	470KΩ	.1Ω	220Ω	Top Cap #17Ω
V 27	6W4GT	Inf.	Inf.	Inf.	Inf.	†47Ω	Inf.	#8Ω	#8Ω	
V 28	1B3GT	PINS 1-8 HAVE INF. RESISTANCE								Top Cap #190Ω
V 29	19AP4A	0Ω	1.6Meg	PIN 10 †1KΩ	PIN 11 ▲50KΩ ▲28KΩ	PIN 12 .1Ω				

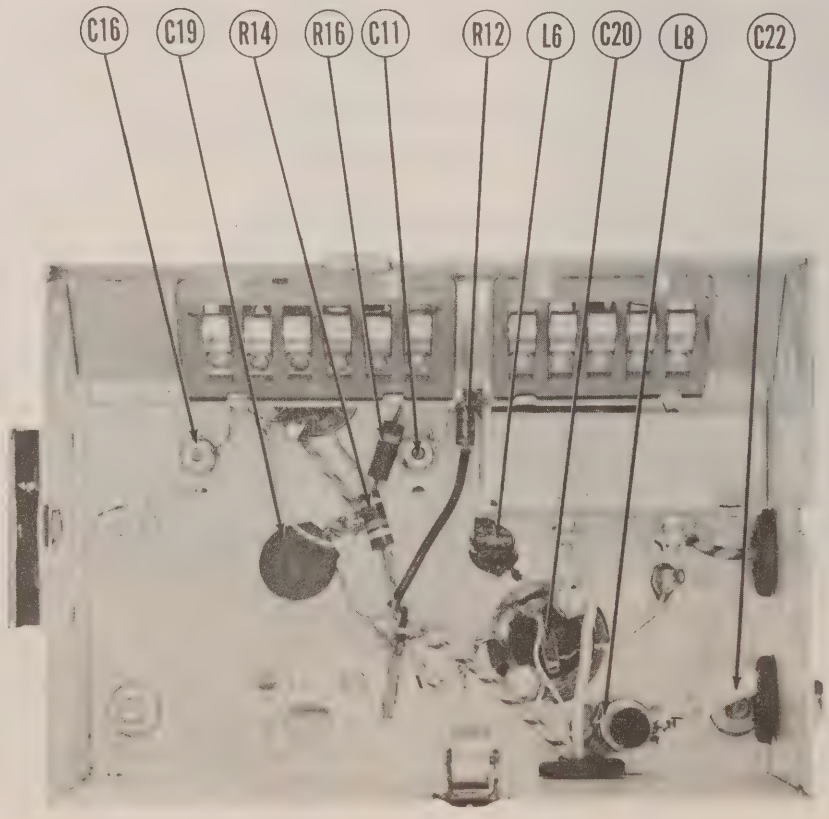
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
† MEASURED FROM OUTPUT OF M1 AND 2
# MEASURED FROM PIN 3 OF V27
▲ MEASURED FROM CENTER TAP OF T1



CHASSIS-REAR VIEW



RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW

CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: Radio Craftsmen PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6CB6	6CB6	7CM	
B	RF Amplifier	6BC5	6BC5	7BD	
C	RF Amplifier	6AG5	6AG5	7BD	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	7CM	
V4	2nd. Video IF Amp.	6CB6	6CB6	7CM	
V5	3rd Video IF Amp.	6CB6	6CB6	7CM	
V6	4th Video IF Amp.	6CB6	6CB6	7CM	
V7	Video Detector- DC Restorer	6AL5	6AL5	6BT	
V8	Video Amplifier	6AU8	6AU8	7BK	
V8A	Video Output	6AQ5	6AQ5	7BZ	
B	Video Output	6AR5	6AR5	8CC	
V10	Keyed AGC	6AU8	6AU8	7BK	
V11	1st. Sound IF Amp.	6AU8	6AU8	7BK	
V12	2nd. Sound IF Amp.	6AU8	6AU8	7BK	
V13	Limiter	6AU6	6AU6	7BK	
V14	Discriminator	6AL5	6AL5	6BT	
V15	AF Amplifier	6AU8	6AU8	7BK	
V16	Phase Inverter	6C4	6C4	6BQ	
V17	Audio Output	6W6GT	6W6GT	7AC	
V18	Audio Output	6W6GT	6W6GT	7AC	
V19	Tuning Indicator	6AL7GT	6AL7GT	8CH	
V20	1st. Sync. Sep.- Sync. Amplifier	6C4	6C4	6BQ	
V21	2nd. Sync. Sep.- Sync. Phase Inv.	12AU7	12AU7	9A	
V22	Vert. Oscillator- Vert. Discharge	6SN7GTA	6SN7GTA	7BD	
V23	Vert. Amplifier	6SL7GT	6SL7GT	7BD	
V24	Horizontal Phase Detector	6AL5	6AL5	6BT	
V25	Horiz. Mult.	12AU7	12AU7	9A	
V26	Horiz. Output	6BQ6GT	6BQ6GT	8AM	
V27	Damper	6W4GT	6W4GT	4CG	
V28	HV Rectifier	1B3GT	1B3GT	3C	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: Radio Craftsmen PART No.	SYLVANIA PART No.	THOMAS PART No	RTMA BASE TYPE	NOTES
V29A	17AP4	17BP4A ①	17BP4 ①	12D	① Space permitting
B	17BP4	17BP4A ②	17BP4	12D	② Outer coating must be grounded.
C	19AP4A	Glass Equivalent 19BP4A ②③	Glass Equivalent	12D	③ High voltage connector must be changed.
D	20CP4	20CP4		12D	
E	20DP4	20DP4		12D	
F	24AP4			12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Radio Craftsmen PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	400	18S010	AFH2-57		UPT4445		TVL-2764	▲ Filter
B	40	400							▲ Filter
C2A	100	200	18S011			UPE101020		TVL-2535	▲ Filter
B	100	200							▲ Filter
C3	20	450	18X030	PRS450/20		BR2045A		TVA-1709	Decoupling
C4	10	50	18X029	PR350/10		BR105		TVA-1304	Horiz. Output Cathode
C5	100	50	18S013	PRS50/100		BRH501		TVA-1310	Vert. Output Cathode
C6	50	25	18S007	PRS25/50		BR102A		TVA-1206	AF Amp. Cathode
C7	50	25	18S007	PRS25/50		BR502A		TVA-1206	Audio Output Cathode
C8	10	150	18X031	PRS150/12		BR101S		TVA-1406	Audio Output Screen
C9	1000		CC20SL1002M	SU1000	D6-102		GP2L-102	5HK-D1	AGC Filter ▼
C10	3-9				829-10				Variable Trimmer
C11	.5-3		17X401		829-3				Variable Trimmer
C12	120		CC20SL121M	SU120	D6-121		GP2K-121	5GA-T12	RF Amp. Decoupling
C13	1000		CC20SL102M	SU1000	D6-102		GP2L-102	5HK-D1	RF amp. Fil.
C14	100		CC20SL101M	SU100M750	TCN-100		M750L-101	5TCU-T1	RF Coupling
C15	.5-3		17X401		829-3				Variable Trimmer
C16	.5-3		17X401		829-3				Variable Trimmer
C17	20		CC20SL200M	SU20NP0	TCZ-20		NP0K-200		Osc. Grid Cap.
C18	10		CC20SL100M	SU10NT50	TCN-10		M750K-100	5TCU-Q1	Fixed Trimmer
C19A	1000			BPD-2X001	DD-2-102		912-001	5HK-2D1	RF Bypass
B	1000								Conv. Fil.
C20	10		CC20SL100M	SU10NP0	TCZ-10		NP0K-100	5TCC-Q1	Fixed Trimmer
C21	68	500	CM20A680M	1469-00007		SR5Q7		MS-47	Fixed Trimmer
C22	120		CC20SL121M	SU120	D6-121		GP2K-121	5GA-T12	IF Coupling
C23	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	AGC Filter
C24	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	Ist. Video IF Dec.
C25	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	RF Bypass
C26	100	500	CM10A101K	1469-0001		SR5T1		MS-31	6th. Video IF Dec.
C27	100		CC20SL101M	1468-0001	D6-101	5W5T1	GP1K-101	5GA-T1	IF Coupling
C28	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	AGC Filter
C29	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	2nd. Video IF Dec.
C30	100	500	CM10A101K	1469-0001		SR5T1		MS-31	Fixed Trimmer
C31	100		CC20SL101M	SU00	D6-101	5W5T1	GP1K-101	5GA-T1	IF Coupling
C32	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	AGC Filter
C33	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	3rd. Video IF Dec.
C34	100		CC20SL101M	SU00	D6-101	5W5T1	GP1K-101	5GA-T1	IF Coupling
C35	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	4th. Video IF Dec.
C36	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	4th. Video IF Cathode
C37	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	RF Bypass
C38	100		CC20SL101M	SU00	D6-101	5W5T1	GP1K-101	5GA-T1	IF Coupling
C39	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	Video Det. Fil.
C40	10		CC20SL100M	SU10	D6-100	5W5Q5	GP1K-100	5GA-Q1	Video Det. Filter
C41	47	500	CM15A470M	1468-00005	D6-470	5W5Q5	GP1K-470	1FM-45	Fixed Trimmer
C42	.47	200	CP10M2474M	P288-47		GT2P5		2TM-P47	Video Amp. Screen
C43	.047	400	CP10M4473M	P288-047	DF-503	PTE485		4TM-S47	Video Coupling
C44	500	500	CM20A561K	D6-581			GP3K-581		Video Output Cathode

PARTS LIST AND DESCRIPTIONS (CONT.)

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: Radio Craftsmen PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C45	.047	400	CP10M4473M	P488-047	DF-503	PTE485		4TM-S47	Video Coupling
C46	.1	400	CP10M4104M	P488-1	DF-104	PTE491		4TM-P1	Picture Tube Cathode
C47	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	1st. Sound IF Dec.
C48	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	1st. Sound IF Cathode
C49	9								Fixed Trimmer *
C50	47		CC20UK470M	SI47N750	TCN-47		N750K-470	5TCU-Q47	2nd. Sound IF Grid
C51	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	2nd. Sound IF Dec.
C52	1500	18	18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	2nd. Sound IF Cathode
C53	33		CC20BL330M	SI33	D6-330	5W5Q25	GP1K-220	5GA-Q22	Limiter Grid Filter
C54	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	Limiter Dec.
C55	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	RF Bypass
C56	1500		18X705	BPD-0015	DD-152	1W5D15	801-0015	5HK-D15	Disc. Fil.
C57	100		CC20SL101M	SI100	D6-101	5W5T1	GP1K-101	5GA-T1	RF Bypass
C58	470		CC25SL471K	SI470	D6-471	5W5T5		5GA-T47	De-emphasis
C59	.01	400	CP10M4103M	P488-01	DE-103	PTE481	GP2-333-103	4TM-S1	Tuning Ind. Filter
C60	.1	400	CP10M4104M	P488-1	DF-104	PTE491		4TM-P1	Audio Coupling
C61	.22	400	CP10M4224M	P488-22		GT4P22		4TM-P22	AF Amp. Screen
C62	.0047	400	CP10M4472M	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Tone Comp.
C63	75	500	CM20A750M	1468-0000?5	D6-750		GP1K-750	1FM-475	Tone Comp.
C64	.022	400	CP10M4223M	P488-023	DF-203	PTE482		4TM-S22	Audio Coupling
C65	.022	400	CP10M4223M	P488-022	DF-203	PTE482		4TM-S22	Audio Coupling
C66	.022	400	CP10M4223M	P488-022	DF-203	PTE482		4TM-S22	Audio Coupling
C67	.1	400	CP10M4104M	P488-1	DF-104	PTE491		4TM-P1	AGC Filter
C68	.047	400	CP10M4473M	P488-047	DF-503	PTE485		4TM-S47	AGC Filter
C69	.47	200	CP10M2474M	P288-47		GT2P5		2TM-P47	AGC Filter
C70	.047	400	CP10M4473M	P488-047	DF-503	PTE485		4TM-S47	Sync. Coupling
C71	.22	400	CP10M4224M	P488-22		GT4P2		4TM-P22	Sync. Coupling
C72A	.0022			P688-0022		PTE6D2	GP2-333-223		Vert. Integrator Net.
B	.0047		*18X706	P688-0047	*PC-100	PTE6D5	GP2-333-472	}*101C1	Vert. Integrator Net.
C	.0047			P688-0047		PTE6D5	GP2-333-472		Vert. Integrator Net.
C73	4700	500	CM30A473K	1464-005		1DR5D5		MS-25	Vert. Osc. Grid
C74	.1	400	CP10M4104M	P488-1	DF-104	PTE491		4TM-P1	Vert. Osc. Det.
C75	.047	400	CP10M4473K	P488-047	DF-503	PTE485		4TM-S47	Vert. Discharge
C76	.1	400	CP10M4104M	P488-1	DF-104	PTE491		4TM-P1	Vert. Sweep Coupling
C77	1000	500	CM25A102M	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Horiz. Sync. Coupling
C78	1000	500	CM25A102M	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Horiz. Sync. Coupling
C79	.047	400	CP10M4473M	P488-047	DF-503	PTE485		4TM-S47	Horiz. Feedback
C80	.01	400	CP10M4103M	P488-01	DE-103	PTE481	GP2-333-103	4TM-S1	Horiz. Voltage Divider
C81	.0047	400	CP10M4472M	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	AFC Filter
C82	.047	400	CP10M4473M	P488-047	DF-503	PTE485		4TM-S47	AFC Filter
C83	4700	500	CM30A472K	1464-005		1DR5D5		MS-25	Fixed Trimmer
C84	330	500	CM90A331K	1469-00035					Horiz. MV Grid Resistor
C85	22		CM15A220M	SI22	D6-220	5W5Q25	GP1K-220	5GA-Q22	Horiz. MV Grid
C86	.22	400	CP10M4224M	P488-22		GT4P22		4TM-P22	Horiz. MV Dec.
C87	470	500	CM20A471K	1468-0005	D6-471	5W5T5	GP2K-471	1FM-35	Horiz. Discharge
C88	1000	500	CM25A102M	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Horiz. Sweep Coupling
C89	.01	400	CP10M4103M	P488-1	DF-104	PTE491		4TM-P1	Horiz. Output Screen
C90	.056	400	CP10M4563M						Damper Filter
C91	.047	400	CP10M4473M	P488-047	DF-503	PTE485		4TM-S47	Damper Filter
C92	900	20000	18X316	HV20C	TV3-502				HV Filter
C93	.022	400	CP10M4223M	P488-022	DF-203	PTE482		4TM-S22	Horiz. Sweep Coupling
C94	.1	400	CP10M4104M	P488-1	DF-104	PTE491		4TM-P1	Horiz. Sweep Coupling
C95	.01	600	CP10M6103M	P688-01	D6-103	PTE681	GP2-333-103	6TM-S1	Line Filter
C96	.01	600	CP10M6103M	P688-01	D6-103	PTE681	GP2-333-103	6TM-S1	Line Filter

* Not used in all models.
† Some models use .047MFD. in this application. (Part # CP10M4473M)
◆ Items C72A, C72B, C72C, R85A, R85B, R85C are combined in one unit.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Radio Crafts. PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	1Meg	½	238718	Concentrikit †B13-137	RTV-153		Tone Control - Panel
B	500KΩ	½		†B13-133			Volume Control and Switch - Rear
C	Shaft end			†E-187			Attach per instructions in Concentrikit
D	Switch			†76-1			Attach per instructions in Concentrikit
R2	150Ω	2	238805	W-2000	43-1500	V-130	Contrast Control - Wire Wound
R3A	100KΩ	½	238719	Q11-128	AG-49-S	B-40	Brightness Control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R3A per instructions
C4A	50KΩ	½	238720	Q11-123	AG-44-S	B-31	Horiz. Hold Control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R4A per instructions
R5A	1Meg	½	238721	Q11-137	AG-81-S	B-59	Vertical Hold Control
B	Shaft		Not req.	Not req.	FS-3	Not req.	Attach to R5A per instructions
R6A	5000Ω	½	238724	Q11-114	AG-19-S	AN-10	Vertical Linearity Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R6A per instructions
R7A	1Meg	½	238723	Q11-130	AG-83-S	AN-75	Vertical Size Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R7A per instructions
R8A	150KΩ	½	238722	Q11-130	AG-52-S	AN-50	Horiz. Drive Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R8A per instructions

† Additional parts to be used with Concentrikit.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Radio Craftsmen PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 20% UNLESS OTHERWISE SPECIFIED
R9	3900Ω	10%	RC20AE392K	BTS-3900	Antenna Coil Shunt
R10	470Ω		RC20AE471K	BTS-470	AGC Network
R11	10KΩ	10%	RC20AE103K	BTS-10K	RF Coil Shunt
R12	2200Ω		RC20AE222K	BTS-2200	RF Amp. Decoupling
R13	10KΩ	10%	RC20AE103K	BTS-10K	Osc. Grid
R14	4700Ω	10%	RC20AE472K	BTS-4700	Osc. Plate
R15	4700Ω	10%	RC20AE472K	BTS-4700	Mixer Grid
R16	2200Ω		RC20AE222K		Mixer Grid
R17	10KΩ		RC20AE103K		1st. Video IF Amp. Grid
R18	56Ω		RC20AE560K		1st. Video IF Amp. Cathode
R19	1200Ω		,	BTS-1200	1st. VideoIF Amp. Decoupling - See Note 1
R20	1200Ω			BTS-1200	AGC Network - See Note 1
R21	10KΩ		RC20AE103K		2nd. Video IF Amp. Grid
R22	56Ω		RC20AE560K		2nd. Video IF Amp. Cathode
R23	1200Ω			BTS-1200	2nd. Video IF Amp. Decoupling - See Note 1
R24	1200Ω			BTS-1200	AGC Network - See Note 1
R25	4700Ω		RC20AE472K	BTS-4700	3rd. Video IF Amp. Grid
R26	56Ω		RC20AE560K		3rd. Video IF Amp. Cathode
R27	3300Ω	5%	RC20AE332K	BTS-3300	3rd. Video IF Amp. Plate

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Radio Craftsmen PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R28	1200Ω				3rd. Video IF Decoupling - See Note 1
R29	220Ω	10%	RC20AE221K	BTS-220	4th. Video IF Amp. Cathode
R30	4700Ω		RC20AE472K	BTS-4700	4th. Video IF Amp. Plate
R31	1200Ω			BTS-1200	4th. Video IF Amp. Decoupling - See Note 1
R32	3900Ω		RC20AE392K	BTS-3900	Video Amp. Grid
R33	6800Ω			BTS-6800	Video Amp. Screen
R34	15KΩ		RC20AE153K	BTA-15K	Voltage Divider
R35	3900Ω		RC20AE392K	BTS-3900	Video Amp. Plate
R36	820KΩ			BTS-820K	Video Output Grid - See Note 2
R37	220Ω	10%	RC20AE221K	BTS-220	Video Output Cathode
R38	3300Ω	10%	RC4GAE332K	BTB-3300	Video Output Plate
R39	1.5Meg	10%		BTS-1.5Meg	DC Restorer Diode Load - See Note 2
R40	33KΩ		RC40AE333K	BTS-33K	AGC Network
R41	10KΩ		RC20AE103K	BTS-10K	Keyed AGC Screen
R42	33KΩ	10%	RC20AE333K	BTS-33K	Keyed AGC Grid
R43	68KΩ	10%	RC20AE683K	BTS-68K	Keyed AGC Grid
R44	100KΩ		RC20AE104K	BTS-100K	Picture Tube Grid
R45	33KΩ	10%	RC20AE333K	BTS-33K	Picture Tube Cathode
R46	1000Ω	10%	RC40AE102K	BTS-1000	Acc. Anode Load
R47	10KΩ		RC20AE103K	BTS-10K	AGC Network
R48	68KΩ		RC20AE683K	BTS-68K	AGC Network
R49	39KΩ	10%		BTS-39K	AGC Network - See Note 3
R50	4700Ω	5%	RC20AE472K	BTS-4700	AGC Network
R51	68Ω		RC20AE680K		1st. Sound IF Amp Cathode
R52	1200Ω			BTS-1200	1st. Sound IF Amp. Decoupling - See Note 1
R53	100KΩ		RC20AE104K	BTS-100K	2nd. Sound IF Amp. Grid
R54	68Ω		RC20AE680K		2nd. Sound IF Amp. Cathode
R55	1200Ω			BTS-1200	2nd. Sound IF Amp. Decoupling - See Note 1
R56	150KΩ		RC20AE154K	BTS-150K	Limiter Grid
R57	10KΩ		RC30AE103K	BTA-10K	Limiter Decoupling
R58	10KΩ		RC30AE103K	BTA-10K	Voltage Divider
R59	100KΩ		RC20AE104K	BTS-100K	Discr. Diode Load
R60	100KΩ		RC20AE104K	BTS-100K	Discr Diode Load
R61	150KΩ		RC20AE154K	BTS-150K	De-emphasis
R62	1.5MΩ	10%		BTS-1.5Meg	Tuning Indicator Filter - See Note 2
R63	1000Ω	10%	RC20AE102K	BTS-1000	AF Amp. Cathode
R64	33Ω		RC20AE330K		AF Amp. Cathode
R65	220KΩ		RC20AE224K	BTS-220K	AF Amp. Screen
R66	100KΩ		RC20AE104K	BTS-100K	AF Amp. Plate
R67	22KΩ		RC20AE223K	BTS-22K	Tone Compensation
R68	470KΩ	10%	RC20AE474K	BTS-470K	Phase Inverter Grid
R69	10KΩ		RC20AE103K	BTS-10K	Phase Inverter Cathode
R70	39KΩ	10%		BTS-39K	Voltage Divider - See Note 3
R71	39KΩ	10%		BTS-39K	Phase Inverter Plate - See Note 3
R72	470KΩ	10%	RC20AE474K	BTS-470K	Output Grid
R73	100Ω		RC40AE10K		Output Cathode
R74	470KΩ	10%	RC20AE474K	BTS-470K	Output Grid
R75	1000Ω		RC30AE102K	BTA-1000	Output Decoupling
R76	3300Ω		RC20AE332K	BTS-3300	Tuning Indicator Cathode
R77	3300Ω		RC20AE332K	BTS-3300	Feedback
R78	12KΩ	10%		BTS-12K	Isolation-See Note 4
R79	4.7Meg	10%	RC20AE475K	BTS-4.7Meg	1st. Sync Separator Grid
R80	100KΩ		RC20AE104K	BTS-100K	1st. Sync. Separator Plate
R81	560KΩ	10%	RC20AE564K	BTS-560K	2nd. Sync. Separator Cathode
R82	2.2Meg	10%	RC20AE225K	BTS- 2.2Meg	2nd. Sync. Separator Plate - See Note 6
R83	1500Ω		RC20AE152K	BTS-1500	Sync. Phase Inverter Cathode
R84	1500Ω		RC20AE152K	BTS-1500	Sync. Phase Inverter Plate
R85A	22KΩ			BTS-22K	Integrator
B	820Ω		*18X706	BTS-8200	Integrator
C	8200Ω			BTS-8200	Integrator
R86	33KΩ		RC20AE333K	BTS-33K	Isolation
R87	1Meg	10%	RC30AE105K	BTS-1Meg	Vertical Osc. Grid
R88	39KΩ	10%		BTS-39K	Vertical Osc. Plate - See Note 3
R89	1Meg	10%		BTS-1Meg	Vertical Discharge Plate
R90	100KΩ		RC20AE103K	BTS-10K	Vertical Peaking - See Note 5
R91	560KΩ		RC20AE560K	BTS-560K	Vertical Amp. Grid
R92	2.2Meg	10%	RC20AE225K	BTS-2.2Meg	Vertical Amp. Grid - See Note 6
R93	560KΩ		RC20AE564K	BTS-560K	Vertical Amp. Grid
R94	680Ω		RC20AE681K	BTS-680	Vertical Amp. Cathode - See Note 6
R95	100KΩ		RC20AE104K	BTS-100K	Horiz. Phase Detector Diode Load
R96	100KΩ		RC20AE104K	BTS-100K	Horiz. Phase Detector Diode Load
R97	22KΩ		RC30AE223K	BTA-22K	Horiz. Feedback Network
R98	33KΩ		RC20AE333K	BTS-33K	Horiz. Feedback Network
R99	470KΩ	10%	RC20AE474K	BTS-470K	Horiz. MV Grid
R100	4.7Meg	10%	RC20AE475K	BTS-4.7Meg	Horiz. MV Grid
R101	82KΩ	10%	RC20AE823K	BTS-82K	Horiz. MV Grid
R102	2200Ω		RC20AE222K	BTS-2200	Horiz. MV Cathode
R103	8200Ω		RC20AE822K	BTS-8200	Horiz. MV Plate
R104	150KΩ		RC20AE154K	BTS-150K	Horiz. MV Plate
R105	8200Ω		RC20AE822K	BTS-8200	Horiz. Peaking
R106	3300Ω		RC30AE332K	BTA-3300	Voltage Divider
R107	68Ω		RC20AE680K		Parasitic Suppressor
R108	470KΩ	10%	RC20AE474K	BTS-470K	Horiz. Output Grid
R109	220Ω	10%	RW522K	1 3/4A-25	Horiz. Output Cathode - Wire Wound
R110	18KΩ	10%	RW5183K	1 3/4A-18K	Horiz. Output Screen - Wire Wound
R111	470KΩ	10%	RC30AE474K		HV Filter
R112	4.7Ω	10%			Discr. Filament
R113	22Ω	10%	RW5220K	1 3/4A-25	Surge Limiter - Wire Wound
R114	22Ω	10%	RW5220K	1 3/4A-25	Surge Limiter - Wire Wound

* Items R85A, R85B, R85C, C72A, C72B, C72C, are combined in one unit.
Note 1 Some models use 1000Ω resistor in this application.
Note 2 Some models use 1Meg resistor in this application.
Note 3 Some models use 47KΩ resistor in this application.
Note 4 Some models use 15KΩ resistor in this application.
Note 5 Some models use 910Ω resistor in this application.
Note 6 Some models use resistors in parallel to obtain the desired value.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: Radio Craftsmen PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC @ 1.9A	300VCT .275ADC	6.3VAC @ 1.2A	6.3VAC @ 10 4A	19S210A			

PARTS LIST CONTINUED ON PAGE 15

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA Radio Craftsmen PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	220Ω	1.4KΩ	19S601	A-8111 ①	A-3000 ①	TBO-3 ①	Vert. Block Osc. Trans.
T3	183Ω	10.5Ω	19S016				Horiz. Output Trans.
	Tap 12Ω	Taps 3.2Ω and 8.2Ω					
		SEC. 2 5.5Ω					
		SEC. 3 0Ω					
T4	1.2KΩ	13.5Ω	19S013	A-8112	A-3038		Vert. Output Trans.
T5A	17Ω		5X813	DY-7	MDF-70		Horiz. Deflection Coils
B	35Ω		5A813B ③				Vert. Deflection Coils

① Drill one new mounting hole.
③ Used in some applications.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA Radio Craftsmen PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T6	2.6KΩ CT	16Ω Taps 4Ω & 8Ω	170Ω CT	1Ω Taps .5Ω & .7Ω	19S011	A-3870	A-2904		

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 ∽)	REPLACEMENT DATA Radio Craftsmen PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	.150A	47.5Ω	1.4Henries	19S407	C-2326 ①	C-2994 ①		
L2	.125A	140Ω	5.5Henries	19S408				

① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA Radio Craftsmen PART No.	NOTES
L3	Ant. Coil	0Ω	0Ω		
L4	Fil. Choke	0Ω			
L5	RF, Mixer Grid & Osc. Coil	0Ω			
L6	Fil. Choke	0Ω			
L7	1st. Sound IF	1.7Ω	0Ω		
L8	1st. Video IF	1.2Ω			
L9	Fil. Choke	0Ω		5A406	
L10	2nd. Video IF	.1Ω		5A010	Includes Trap
L11	Fil. Choke	0Ω		5A406	
L12	Booster Coil	0Ω		5A410	
L13	3rd. Video IF	.1Ω		5A011	Includes Trap
L14	Fil. Choke	0Ω		5A406	
L15	RF Choke	0Ω		5A406	
L16	4th. Video IF	.1Ω		5A012B	
L17	Fil. Choke	0Ω		5A406	
L18	5th. Video IF	.1Ω		5A012A	
L19	4.5MC Trap	2.7Ω		5A407A	
L20	Peaking	4.1Ω		5X404	120 Microhenries wound on 22KΩ resistor (blue dot)
L21	Peaking	6.5Ω		5X405	250 Microhenries (green dot)
L22	Peaking	4.1Ω		5S 404	120 Microhenries wound on 22KΩ resistor (blue dot)
L23	Peaking	3.6Ω		5X403	93 Microhenries (red dot)
L24	Peaking	4.1Ω		5X404	120 Microhenries wound on 22KΩ resistor (blue dot)
L25	Peaking	3.6Ω		5X403	93 Microhenries (red dot)
L26	Fil. Choke	0Ω		5A406	
L27	2nd. Sound IF	.2Ω	.2Ω	5X018	
L28	Fil. Choke	0Ω		5A406	
L29	3rd. Sound IF	.2Ω	.2Ω	5X018	
L30	Fil. Choke	0Ω		5A406	
L31	Disc. Trans.	.2Ω	.3Ω	5X007	Tap .1Ω
L32	Horiz. Osc.	49Ω		5S812	
L33	Horiz. Size	2.5Ω		5S815	Tap 1.5Ω
L34	Horiz. Line	5.5Ω		5S814	

SELENIUM RECTIFIER

ITEM No.	RATING CURRENT	REPLACEMENT DATA Radio Craftsmen PART No.	SYLVANIA PART No.	SELETRON PART No.	NOTES
M1	.074A	32X005	NC-5		
M2	.074A	32X005	NC-5		
M3	.150A	32X003	NE-5		
M4	.150A	32X003	NE-5		

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA RADIO CRAFTSMEN PART No. FUSE	RADIO CRAFTSMEN PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	REMARKS
M5	3AG	3Amp.	34X003		312003	342001	

MISCELLANEOUS

ITEM No.	PART NAME	Radio Craftsmen PART No.	NOTES
M6A	RF Tuner		
B	RF Tuner	25S048	Alternate (Includes Function Switch)
M7	Switch	4X009	Booster
M8	Focus Magnet	16X406	
M9	Ion Trap	16X407	
	Knob	6S011C	Channel Selector
	Knob	6S011A	Off/On Volume
	Knob	6S013A	Tone Control
	Knob	6S013C	Fine Funing
	Knob	6X010	Black 9/16 Dia. (Vert. and Horiz. Hold - Brightness and Contrast)

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

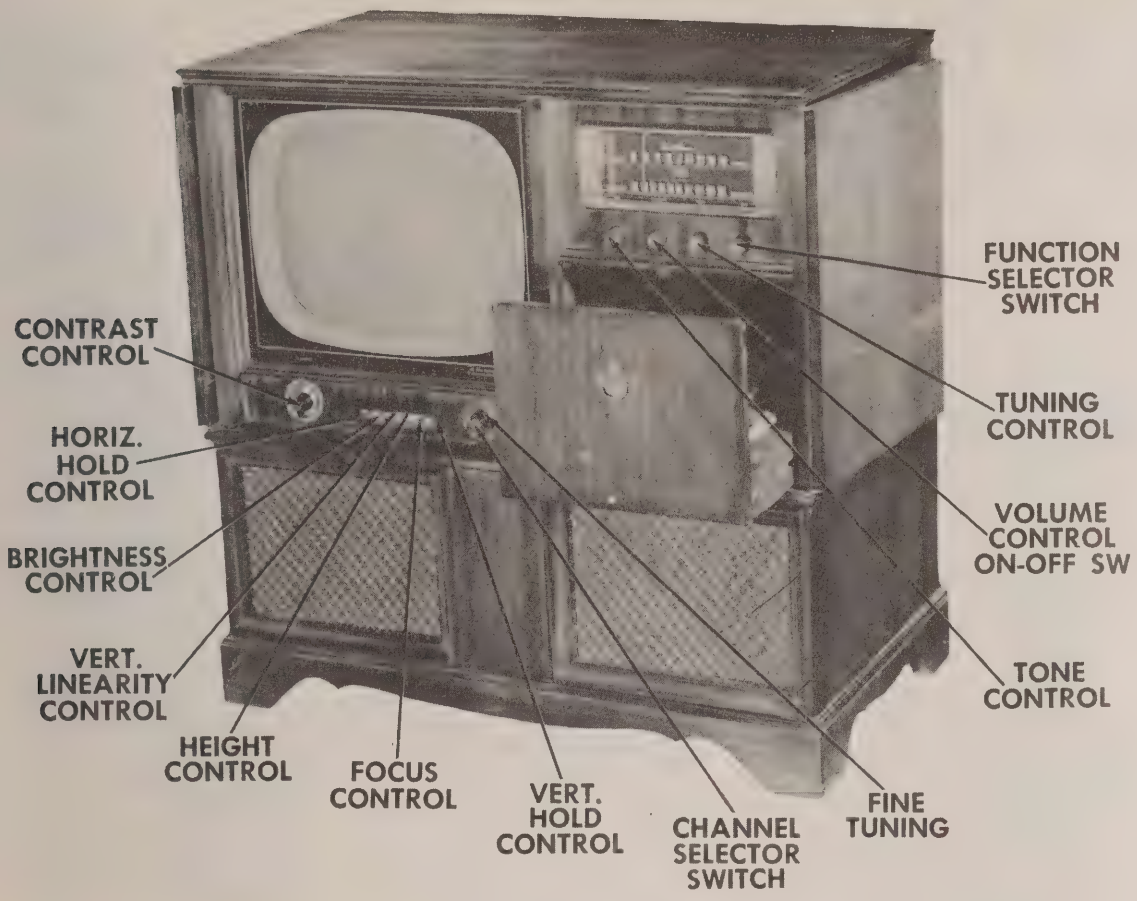
TRUETONE
MODEL 2D1194A

HOWARD W. SAMS & CO., INC. • Indianapolis, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 11-51 SET 151 FOLDER 11

TRUETONE
MODEL 2D1194A



TRUETONE
MODEL 2D1194A

TRADE NAME	Truetone, Model 2D1194A		
SUPPLIER	Western Au to Supply Co., 2107 Grand Ave., Kansas City, Mo.		
TYPE SET	TV-AM-FM-Phono Combination		
TUBES	Twenty nine		
POWER SUPPLY	110-120 Volts AC-60 Cycle	RATINGS (TV)	2.5 Amp. at 117 Volts AC
		(Radio)	.575 Amp. at 117 Volts AC
TUNING RANGE—	TV Channels 2 thru 13 AM 540-1600KC FM 88-108MC		

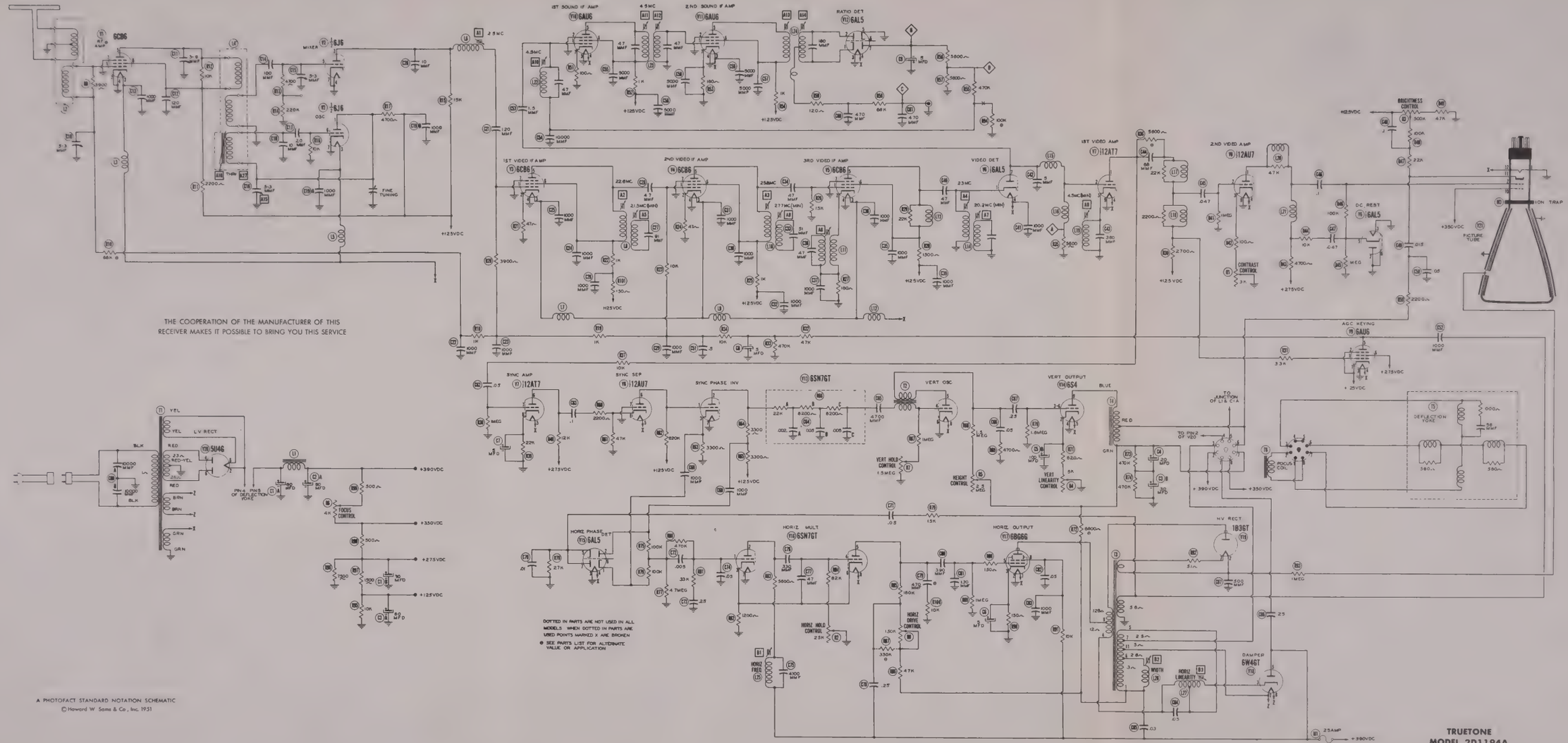
INDEX

Alignment Instructions 6, 7
Drive Cord Stringing 23
Disassembly Instructions 23
Horizontal Sweep Circuit Adjustments 23
Parts List and Description ..... 15 thru 19
Photographs
Cabinet - Rear View 23
Capacitor and Alignment Identification (radio) ... 14
Capacitor and Alignment Identification (TV) 4, 9
Chassis - Top View (radio) 13
Photographs (cont.)
Chassis - Top View (TV) 3
RF Tuner 10
Resistor and Inductor Identification (radio) 20
Resistor and Inductor Identification (TV) 11, 22
Schematic (radio) 12, 21
Schematic (TV) 2
Tube Placement Charts 5
Voltage and Resistance Measurements (radio) 12, 21
Voltage and Resistance Measurements (TV) 8

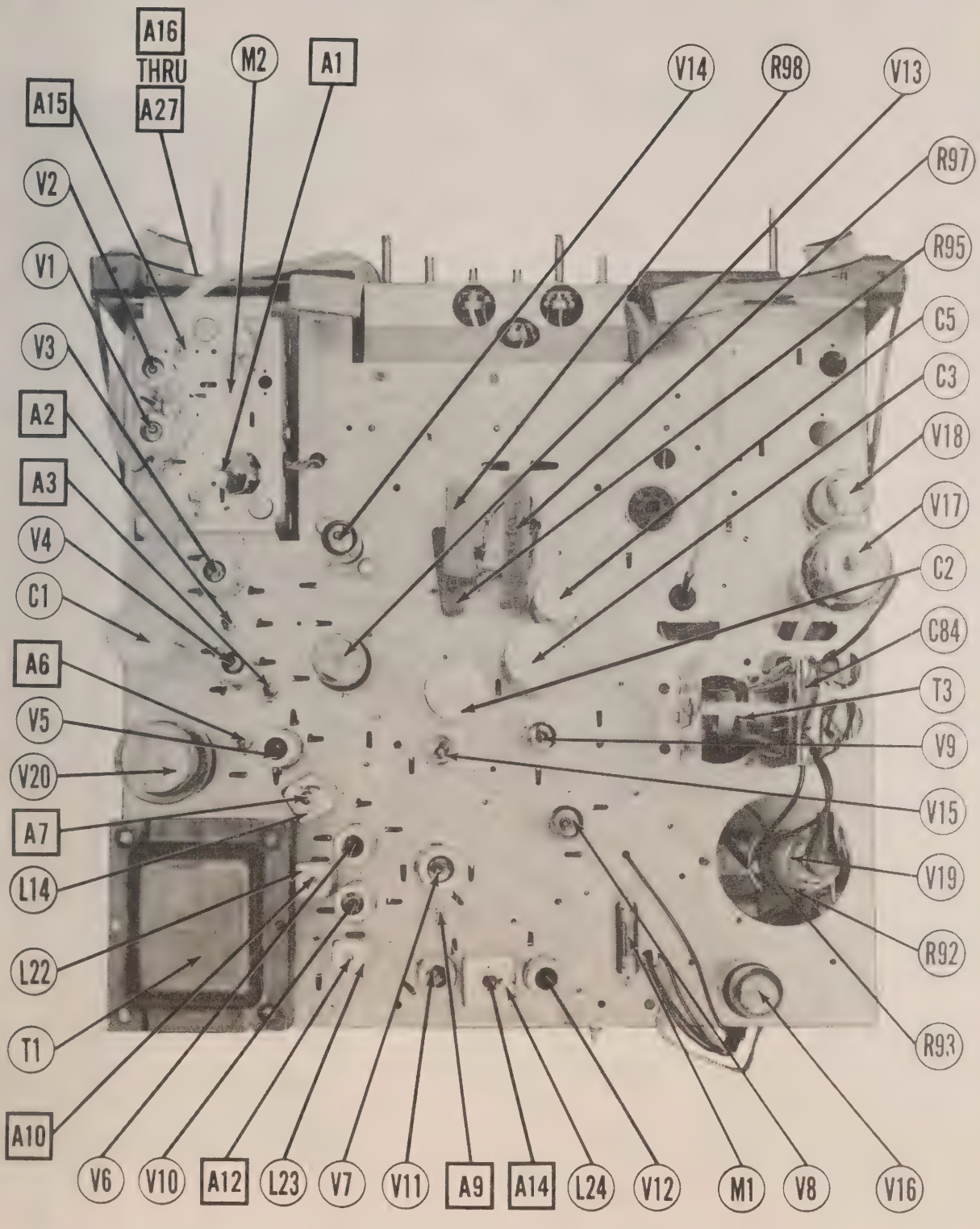
FOR SERVICE INFROMATION ON RECORD CHANGER UNIT SEE PHOTOFACT SET # 75 -FOLDER # 11 OR RECORD CHANGER MANUAL CM-3.

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

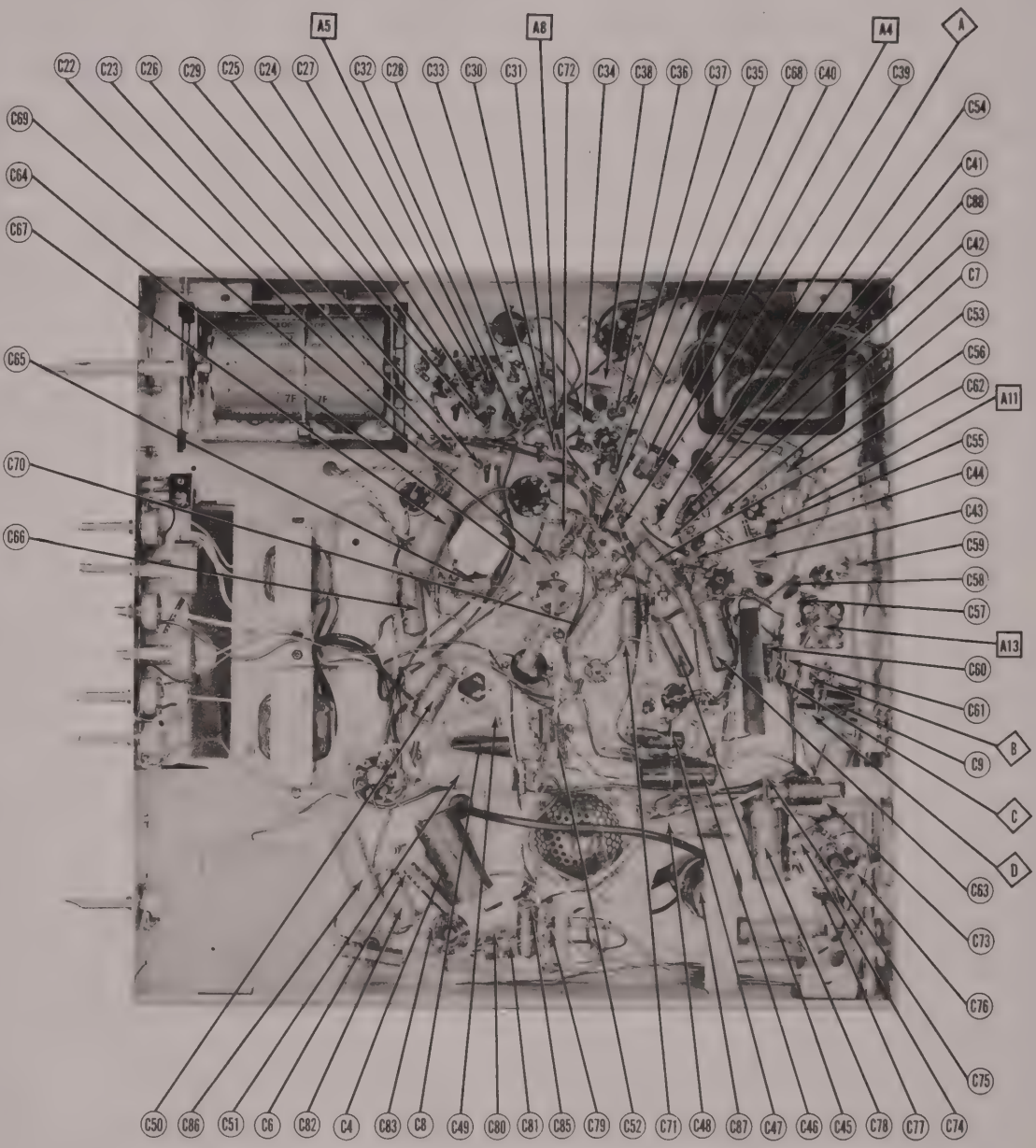

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
DOTTED IN PARTS ARE NOT USED IN ALL MODELS WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1951
TRUETONE MODEL 2D1194A

TRUETONE MODEL 2D1194A

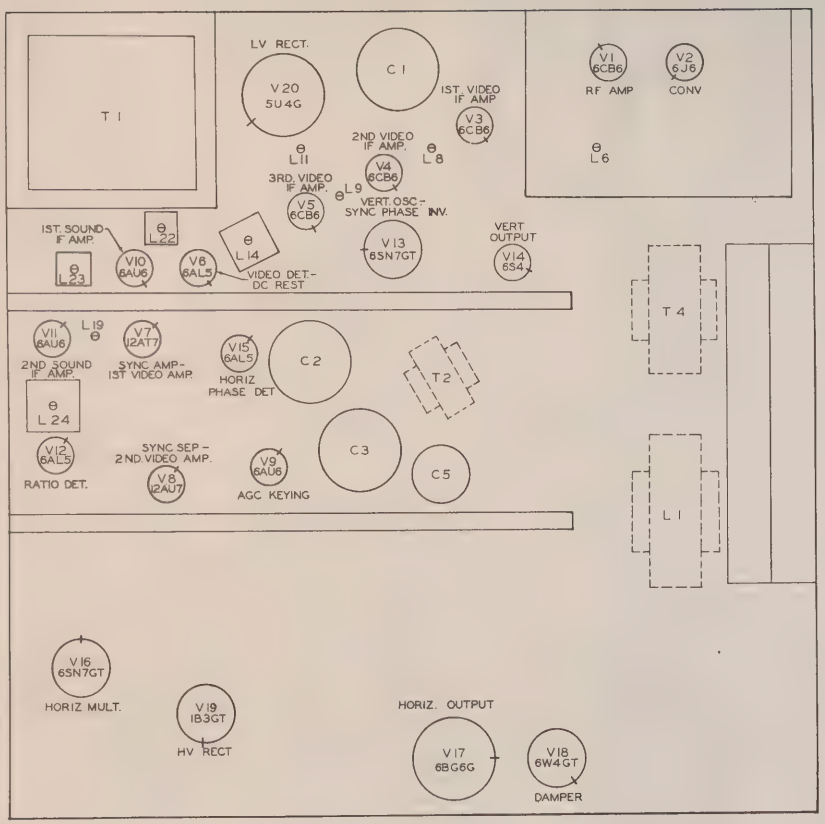


CHASSIS TOP VIEW

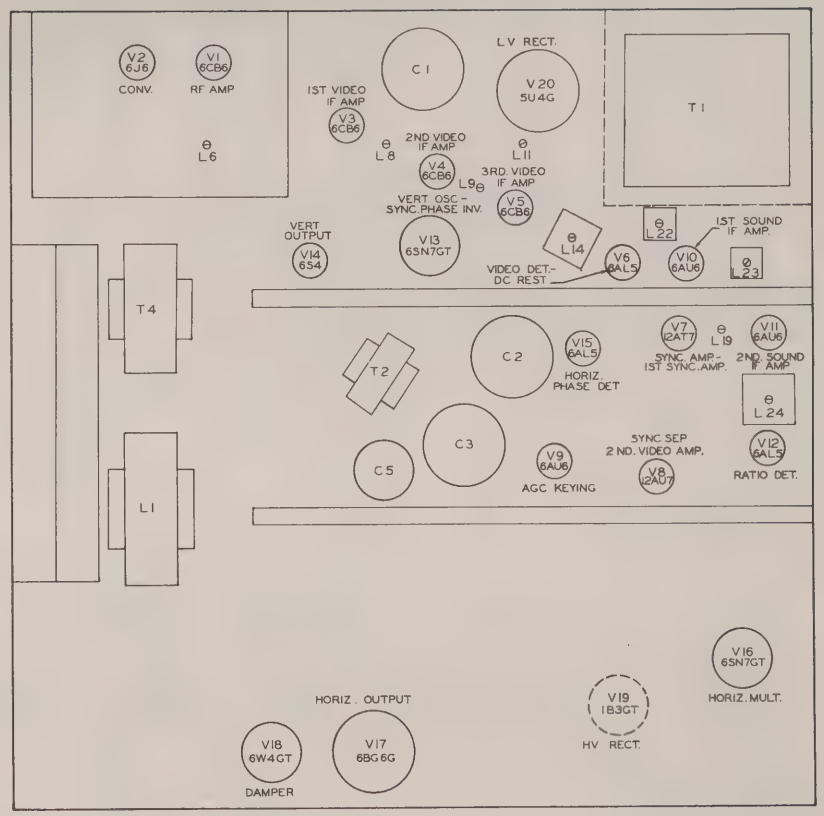
TRUETONE
MODEL 2D1194A



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator, tube, (V16), from its socket.

VIDEO IF ALIGNMENT

Remove the converter tube, (V2), from its socket and replace it with a 6J6 which has pin 1 removed. This will disable the local oscillator and prevent the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the ungrounded lead of C51. Connect the positive lead to chassis.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	25MC (unmod.)	Any	DC probe to Point (A). Common to chassis.	A1	Adjust for maximum deflection. Attenuate signal gen. to maintain 2 volt reading.
2.	"	"	22.6MC	"	"	A2	"
3.	"	"	25.8MC	"	"	A3	"
4.	"	"	23MC	"	"	A4	"
5.	"	"	21.5MC	"	"	A5	Adjust for MINIMUM deflection.
6.	"	"	21.8MC	"	"	A6	"
7.	"	"	20.2MC	"	"	A7	"
8.	"	"	27.7MC	"	"	A8	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	Direct	High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis.	24MC (10MC SWP)	21.7MC 22.6MC 25.25MC 26.2MC	Any	Vert. Amp. to Point (A). Low side to chassis.		Check for response curve similar to fig. 1. If necessary retouch A1 thru A5 for proper response.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
10.	10KΩ carbon resistor	High side to pin 2, (Grid) of 12AT7, (V7). Low side to chassis.	Not used	4.5MC (400∿ Mod.)	Any	Vert. Amp. to pin 2 of picture tube. Low side to chassis.	A9	Adjust for MINIMUM 400∿ indication.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect a short across C56.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
11.	10KΩ carbon resistor	High side thru 10KΩ to pin 7, (plate), of 6AL5, (V6). Low side to chassis.	4.5MC (unmod.)	Any	DC probe to Point (B). Common to chassis.	A10, A11, A12, A13	Adjust for maximum deflection.
12.	"	"	"	"	DC probe to Point (C). Common to Point (D).	A14	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Connect a short across C56.
Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	10KΩ carbon resistor	High side thru 10KΩ to pin 7, (plate), of 6AL5, (V6). Low side to chassis.	4.5MC (450KC SWP)	4.5MC	Any	Vert. Amp. to Point (B). Low side to chassis.	A10, A11, A12, A13	Disconnect stabilizer capacitor C9. Adjust for maximum amplitude and symmetry as per fig. 2.
12.	"	"	"	"	"	Vert. Amp. to Point (C). Low side to chassis.	A14	Reconnect capacitor C9. Adjust A14 so 4.5MC occurs at center of crossover lines as per fig. 3. SLIGHTLY retouch A13 for maximum amplitude and straightness of crossover lines.

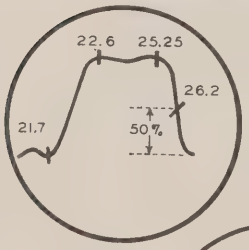


FIG. 1

FIG. 2

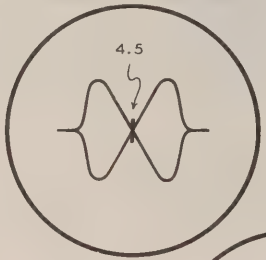


FIG. 3

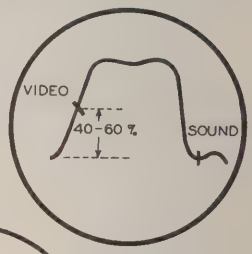


FIG. 4

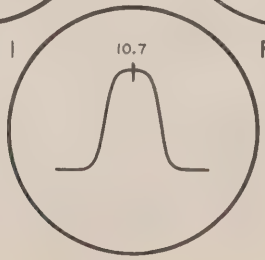


FIG. 5

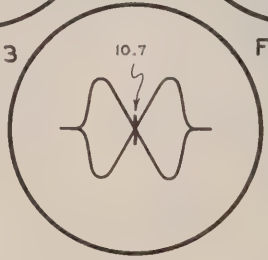


FIG. 6

TV ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.
Complete oscillator alignment may not be necessary. If the oscillator seems to be off frequency approximately the same amount for a majority of the channels, it may be possible to correct them in one step using A 15. It should be noted that this is an all channel oscillator circuit adjustment and should not be adjusted for any individual channel. If adjustment of A15 will not bring all channels well within the range of the fine tuning control, it will be necessary to adjust the channel strip adjustment for each channel that is off frequency. The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
13.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. Amp. to Point (A). Low side to chassis.	A16	Adjust to place sound marker in "notch" as per fig. 4. The Video marker should fall between 40 and 60%.
			207MC (10MC SWP)	205.25MC 209.75MC	12		A17	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A18	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A19	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A20	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A21	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A22	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A23	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A24	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A25	
			63MC (10MC SWP)	61.25MC 65.75MC	3		A26	
			57MC (10MC SWP)	55.25MC 59.75MC	2		A27	

THE RF AND MIXER PORTION OF THIS RECEIVER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION SHOULD NOT BE REQUIRED IN THE FIELD.

RADIO ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
14.	.1 MFD.	High side to pin 7, (Grid), of 6BE6, (V23). Low side to chassis.	455KC (400∿ Mod.)	AM	Tuning gang fully open.	Across voice coil.	A28, A29 A30, A31	Adjust for maximum output.
15.	"	"	1620KC	"	"	"	A32	"
16.		Loop	1400KC	"	Tune for max. output.	"	A33	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. Set pointer to 1400KC.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
17.	2500MMF	High side to pin 1, (Grid), of 6BA6, (V24). Low side to chassis.	10.7MC (unmod.)	FM	Tuning gang fully open.	DC probe to Point (E). Common to chassis.	A34, A35 A36	Adjust for maximum deflection.
18.	"	High side to pin 7, (Grid), of 12AT7, (V22). Low side to chassis.	"	"	"	"	A37, A38	"
19.	"	"	"	"	"	DC probe to Point (F). Common to chassis.	A39	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
17.	2500MMF	High side to pin 1, (Grid), of 6BA6, (V24). Low side to chassis.	10.7MC (450KC SWP)	FM	Point of non-interference.	Vert. Amp. to Point (E). Low side to chassis.	A34, A35 A36	Disconnect stabilizer capacitor C90. Adjust for maximum amplitude and symmetry as per fig. 5.
18.	"	High side to pin 7, (Grid), of 12AT7, (V22). Low side to chassis.	"	"	"	"	A37, A38	"
19.	"	"	"	"	"	Vert. Amp. to Point (F). Low side to chassis.	A39	Reconnect capacitor C90. Adjust A40 so 10.7MC occurs at center of crossover lines as per fig. 6. SLIGHTLY retouch A34 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
20	300Ω carbon resistor	High side thru 300Ω to ungrounded "FM" antenna terminal. Low side to chassis.	108.5MC (unmod.)	FM	Tuning gang fully open.	DC probe to Point (E). Common to chassis.	A40	Adjust for maximum deflection.
21.	"	"	104.5MC	"	Tune for max. deflection.	"	A41	"

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	-.8VDC	0V	6.3VAC	0V	90VDC	90VDC	0V		
V 2	6J6	85VDC	70VDC	6.3VAC	0V	0V	§-2.5VDC	0V	0	
V 3	6CB6	-3VDC	.5VDC	6.3VAC	0V	110VDC	110VDC	0V		
V 4	6CB6	-.3VDC	.5VDC	6.3VAC	0V	110VDC	110VDC	0V		
V 5	6CB6	0V	1.6VDC	6.3VAC	0V	105VDC	105VDC	0V		
V 6	6AL5	0V	0V	0V	6.3VAC	.9VDC	0V	-1.9VDC		
V 7	12AT7	85VDC	-.6VDC	0V	6.3VAC	6.3VAC	270VDC	0V	7.8VDC	0V
V 8	12AU7	260VDC	0V	13VDC	6.3VAC	6.3VAC	18VDC	0V	2.1VDC	0V
V 9	6AU6	110VDC	125VDC	0V	6.3VAC	-.3VDC	275VDC	125VDC		
V 10	6AU6	0V	0V	0V	6.3VAC	115VDC	115VDC	.3VDC		
V 11	6AU6	0V	0V	6.3VAC	0V	115VDC	115VDC	1.3VDC		
V 12	6AL5	-.2VDC	-.2VDC	0V	6.3VAC	0V	-.1VDC	-.2VDC		
V 13	6SN7GT	§20VDC	85VDC	20VDC	§-19VDC §-37VDC	105VDC 195VDC	0V	0V	6.3VAC	
V 14	6S4	0V	17VDC 42VDC	-.2VDC	0V	6.3VAC	-.2VDC	0V	0V	545VDC
V 15	6AL5	6.4VDC	-6.2VDC	0V	6.3VAC	0V	0V	0V		
V 16	6SN7GT	§2.2VDC	340VDC	12VDC	§-11VDC §-13VDC	160VDC 205VDC	12VDC	0V	6.3VAC	
V 17	6BG6G	0V	0V	13VDC	0V	-17VDC	-17VDC	6.3VAC	310VDC	Top Cap *
V 18	6W4GT	0V	570VDC	650VDC	0V	390VDC	650VDC	650VDC	650VDC	
V 19	1B3GT	* DO NOT MEASURE								Top Cap *
V 20	5U4G	0V	440VDC	0V	360VAC	0V	360VAC	0V	400VDC	
V 21		0V	.9VDC	PIN 10 350VDC	PIN 11 6VDC 120VDC	PIN 12 6.3VAC	H. V. CONNECTOR ** 13,250V			

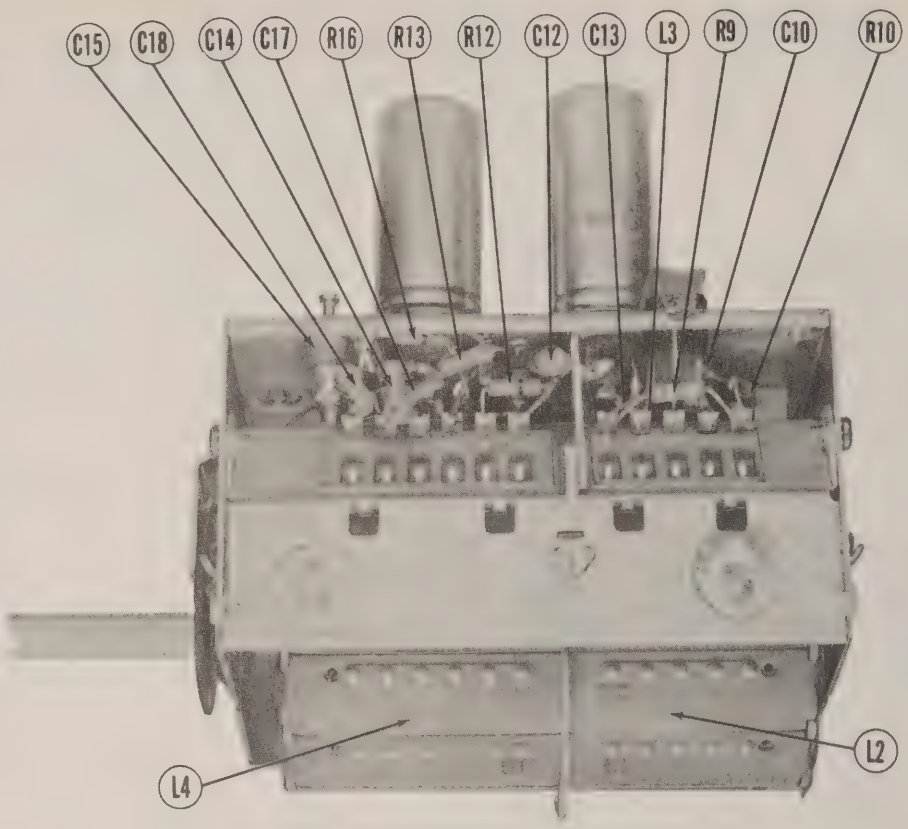
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
* DO NOT MEASURE
FOCUS CONTROL FULLY COUNTER-CLOCKWISE
** USE EXTREME CAUTION WHEN MEASURING THIS VOLTAGE

RESISTANCE READINGS

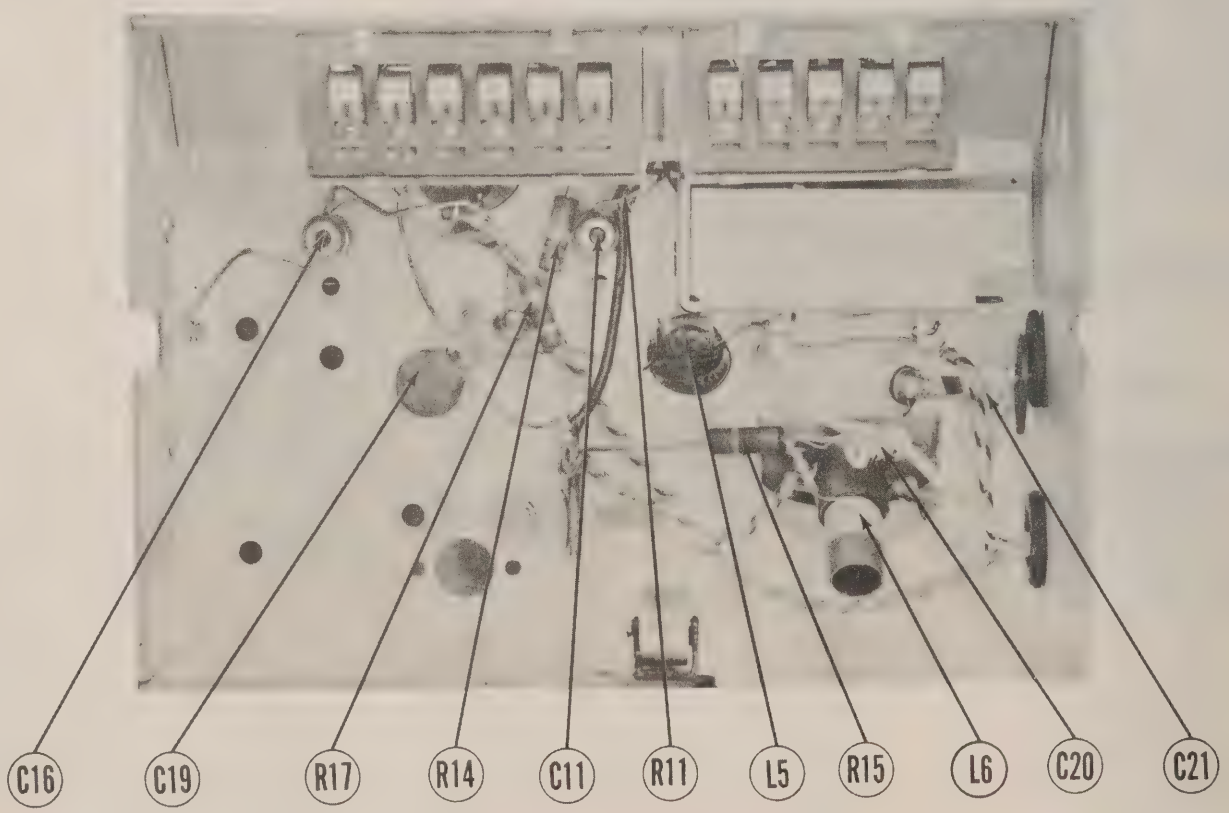
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	480KΩ	0Ω	.1Ω	0Ω	†4.6KΩ	†4.6KΩ	0Ω		
V 2	6J6	†7.1KΩ	†17KΩ	.1Ω	0Ω	225KΩ	10KΩ	0Ω		
V 3	6CB6	485KΩ	47Ω	.1Ω	0Ω	†3.4KΩ	†3.4KΩ	0Ω		
V 4	6CB6	490KΩ	47Ω	.1Ω	0Ω	†3.4KΩ	†3.4KΩ	0Ω		
V 5	6CB6	15KΩ	180Ω	.1Ω	0Ω	†3.9KΩ	†3.9KΩ	0Ω		
V 6	6AL5	.2Ω	0Ω	0Ω	.1Ω	1Meg	0Ω	5.6KΩ		
V 7	12AT7	†10.7KΩ	5.6KΩ	.2Ω	.1Ω	.1Ω	†14KΩ	1 Meg	22KΩ	0Ω
V 8	12AU7	†5.6KΩ	1Meg	3.1KΩ	.1Ω	.1Ω	†820KΩ	0Ω	47KΩ	0Ω
V 9	6AU6	†38KΩ	†2.4KΩ	0Ω	.1Ω	515KΩ	†900Ω	†2.4KΩ		
V 10	6AU6	100KΩ	0Ω	0Ω	.1Ω	†3.4KΩ	†3.4KΩ	100Ω		
V 11	6AU6	1.6Ω	0Ω	.1Ω	0Ω	†3.4KΩ	†3.4KΩ	180Ω		
V 12	6AL5	Inf.	Inf.	0Ω	.1Ω	0Ω	Inf.	11KΩ		
V 13	6SN7GT	†820KΩ	†9KΩ	3.3KΩ	2.5Meg 1Meg	#4Meg #1.5Meg	0Ω	0Ω	.1Ω	
V 14	6S4	Inf.	5.8KΩ 820Ω	1.8Meg	0Ω	.1Ω	1.8Meg	Inf.	Inf.	#7.8KΩ
V 15	6AL5	4.8Meg	4.8Meg	0Ω	.1Ω	27KΩ	Inf.	27KΩ		
V 16	6SN7GT	5.1Meg	†5.6KΩ	1.2KΩ	105KΩ 82KΩ	#325KΩ #225KΩ	1.2KΩ	0Ω	.1Ω	
V 17	6BG6G	Inf.	0Ω	150Ω	Inf.	1Meg	1Meg	.1Ω	†10KΩ	Top Cap #17Ω
V 18	6W4GT	Inf.	#6.8KΩ	800KΩ	Inf.	†52Ω	#12Ω	#8Ω	#8Ω	
V 19	1B3GT	PIN 1-8 HAVE INF. RESISTANCE								Top Cap #140Ω
V 20	5U4G	Inf.	5.5KΩ	Inf.	23Ω	Inf.	24Ω	Inf.	5.5KΩ	
V 21		0Ω	1.1Meg	PIN 10 †400Ω	PIN 11 †300KΩ †140KΩ	PIN 12 .1Ω				

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
† MEASURED FROM PIN 2 OF V20
# MEASURED FROM PIN 3 OF V18
FOCUS CONTROL FULLY COUNTER-CLOCKWISE

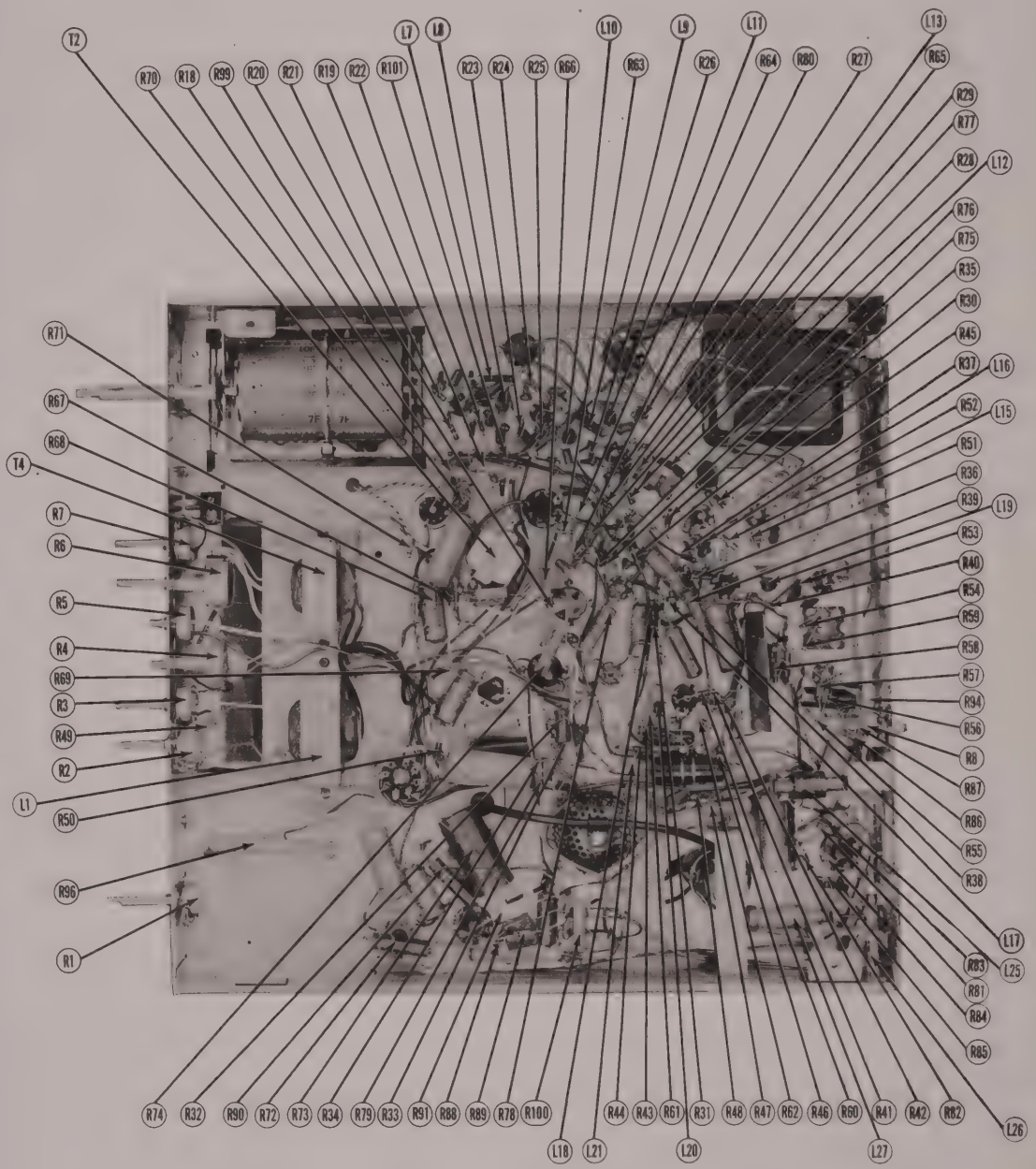
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



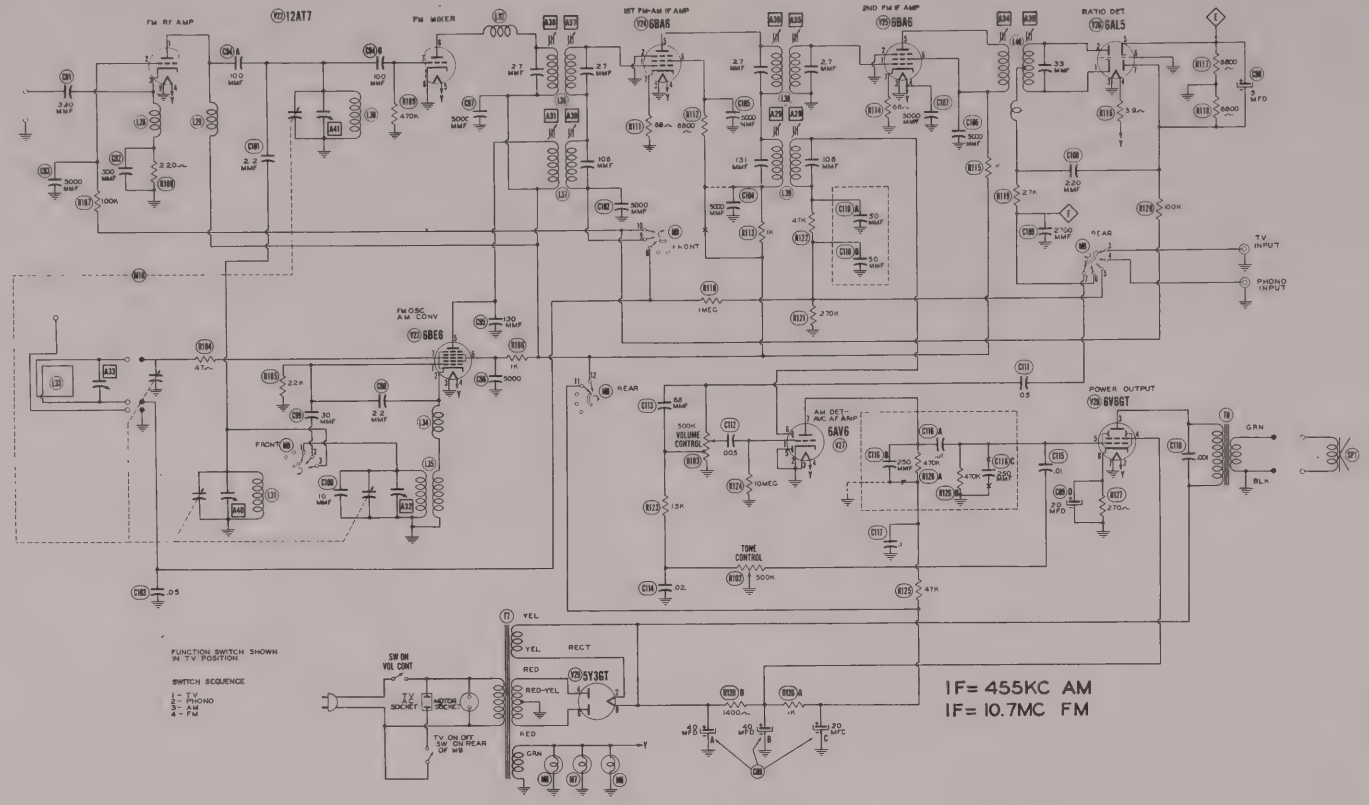
RF TUNER-RIGHT SIDE



RF TUNER-BOTTOM VIEW



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V22	12AT7	+120VDC † 105VDC	† 3VDC	† 6VAC	0V	0V	+120VDC †105VDC	55-†-6VDC	0V	6.3VAC
V23	6BE6	6.4-6.9VDC †- 6VDC	0V	0V	6.3VAC	105VDC	105VDC †105VDC	4-†-8VDC		
V24	6BA6	†- 1VDC	0V	0V	6.3VAC	105VDC	105VDC	5VDC		
V25	6BA6	0V	0V	0V	6.3VAC	105VDC	105VDC	5VDC		
V26	6AL5	1VDC	1VDC	0V	5VAC	2VDC	0V	3VDC		
V27	6AV6	4VDC	0V	0V	6.3VAC	0V	4-†-5VDC †-4VDC	56VDC		
V28	6V6GT	0V	6.3VAC	325VDC	320VDC	0V	0V	0V	6.8VDC	
V29	5Y3G	0V	345VDC	0V	354VAC	0V	354VAC	0V	345VDC	

† TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V22	12AT7	12.4KΩ	200KΩ	230Ω	0Ω	0Ω	12.4KΩ	470KΩ	0Ω	1Ω
V23	6BE6	22KΩ	2.2Ω	0Ω	1Ω	12.4KΩ	13.4KΩ	1.3Meg		
V24	6BA6	∞ 2Meg	0Ω	0Ω	1Ω	13.4KΩ	150KΩ	68Ω		
V25	6BA6	1Ω	0Ω	0Ω	1Ω	13.4KΩ	12.4KΩ	68Ω		
V26	6AL5	Inf.	Inf.	0Ω	1.5Ω	6.8KΩ	0Ω	6.8KΩ		
V27	6AV6	10Meg	0Ω	0Ω	1Ω	0Ω	310KΩ	1300KΩ		
V28	6V6GT	Inf.	1Ω	1140Ω	11.4KΩ	470KΩ	1Ω	0Ω	270Ω	
V29	5Y3G	Inf.	60KΩ	Inf.	100Ω	Inf.	100Ω	Inf.	60KΩ	

ALL MEASUREMENTS TAKEN IN AM AND FM POSITION ONLY
* MEASURED IN AM POSITION
† MEASURED IN FM POSITION
† MEASURED FROM PIN 8 OF V26

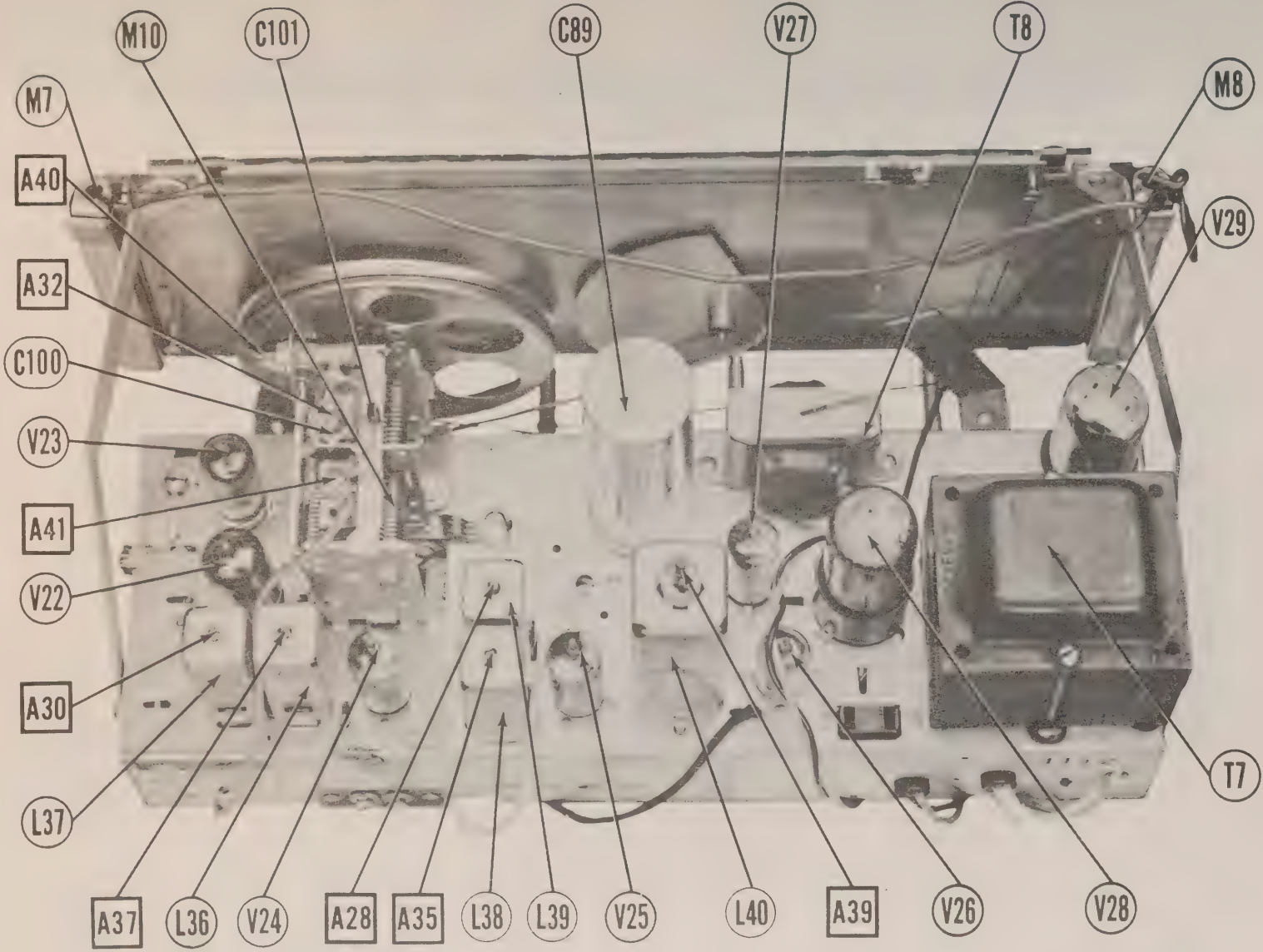
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC
©Howard W. Sams & Co., Inc. 1951

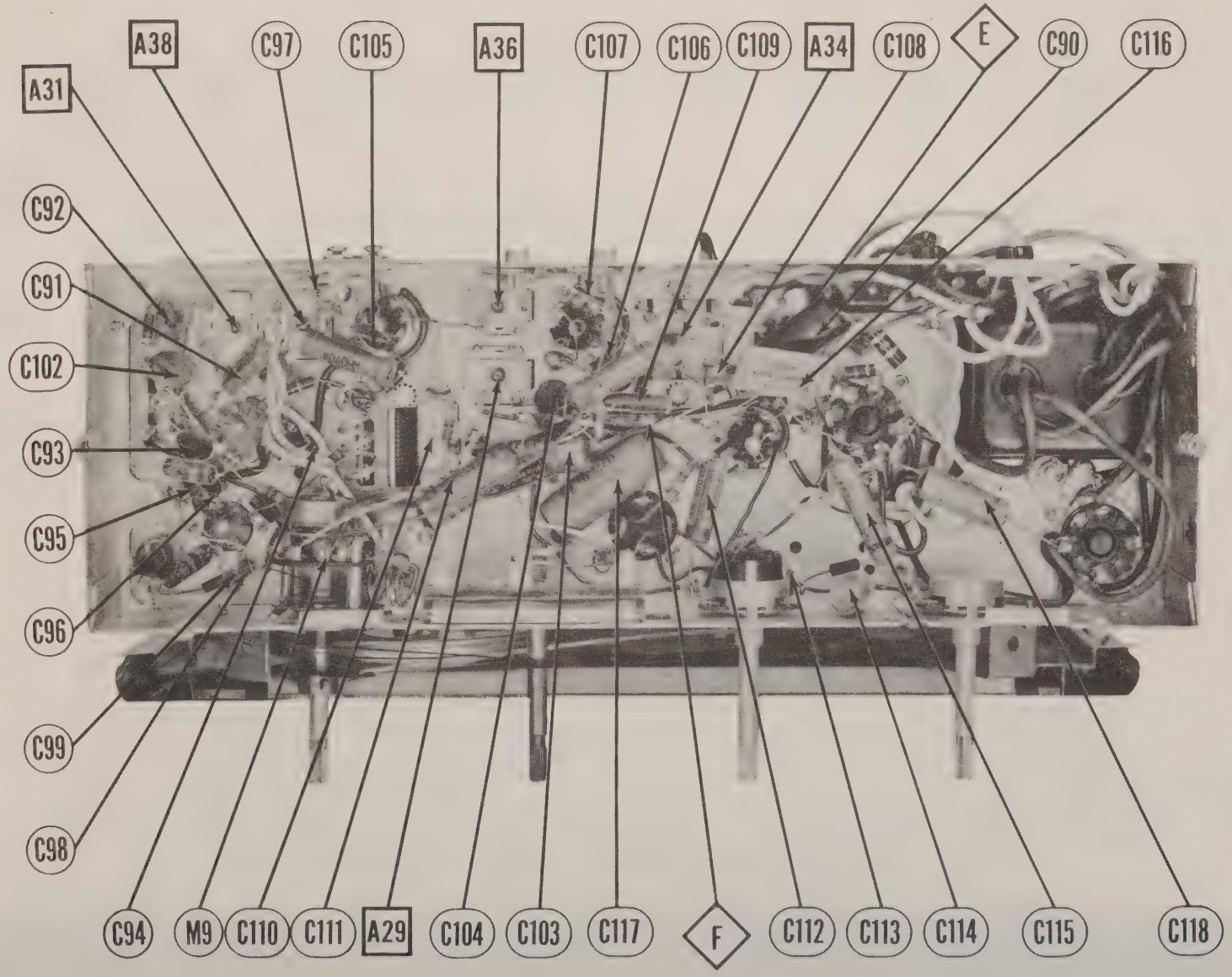
TRUETONE
MODEL 2D1194A

RADIO SCHEMATIC

TRUETONE
MODEL 2D1194A



RADIO CHASSIS-TOP VIEW



RADIO CHASSIS-BOTTOM VIEW-CAPACITOR IDENTIFICATION

TV PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amplifier	6CB6	6CB6	6CK	
B	RF Amplifier	6AG5	6AG5	7BD	
V2	Converter	6J6	6J6	7BF	
V3	1st. Video IF Amp.	6CB6	6CB6	6CK	
V4	2nd. Video IF Amp.	6CB6	6CB6	6CK	
V5	3rd. Video IF Amp.	6CB6	6CB6	6CK	
V6	Video Detector-DC Restorer	6AL5	6AL5	6BT	
V7	1st. Video Amp.-Sync. Amplifier	12AT7	12AT7	9A	
V8	2nd. Video Amp.-Sync. Separator	12AU7	12AU7	9A	
V9	AGC Keying	6AU6	6AU6	7BK	
V10	1st. Sound IF Amp.	6AU6	6AU6	7BK	
V11	2nd. Sound IF Amp.	6AU6	6AU6	7BK	
V12	Ratio Detector	6AL5	6AL5	6BT	
V13	Sync. Phase Inv.-Vert. Oscillator	6SN7GT	6SN7GT	8BD	
V14	Vert. Output	6S4	6S4	9AC	
V15	Horiz. Phase Det.	6AL5	6AL5	6BT	
V16	Horiz. Mult.	6SN7GT	6SN7GT	8BD	
V17	Horiz. Output	6BG6G	6BG6G	5BT	
V18	Damper	6W4GT	6W4GT	4CG	
V19	HV Rectifier	1B3GT	1B3GT	3C	
V20	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA: TRUETONE PART No.	SYLVANIA PART No.	THOMAS PART No.	RTMA BASE TYPE	NOTES
V21	20CP4	20CP4	20CP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	80	450	45X376	AFH3-44		UP8445		TVL-2777	▲ Filter
B	30	450							■ Filter
C2A	80	450	45X384	AFH2-91		UPT8045		TVL-2710	▲ Filter
B	40	40				V5			■ Not used
C3A	80	450	45X376	AFH3-44		UP8445		TVL-2777	▲ Filter
B	30	450							■ Vert. Output Dec.
C4	20	450	45X382	PRS450/20		BR2045A		TVA-1709	Vert. Output Decoupling
C5A	10	450	45X385			UPT204		TVL-1705	■ Not used
B	100	50						TVA-1310	▲ Vert. Output Cathode
C6	5	25	45X378	PRS150/4		BR550		TVA-1203	Horiz. Output Cathode
C7	5	25	45X378	PRS150/4		BR550		TVA-1203	Sync. Amp. Cathode
C8	5	100	45X361	PRS150/4		BR415		TVA-1402	AGC Filter
C9	5	25	45X378	PRS150/4		BR550		TVA-1203	Stabilizing Cap.
C10	.5-3		31B-206		829-3				Variable Trimmer
C11	3-9		31B-207		829-10				Variable Trimmer
C12	120		13B-033		TCN-120		N750L-121		AF Amp. Decoupling
C13	1000		47X519	SI1000	D6-102		GP2L-102	5HK-D1	AF Amp. Filament
C14	100		13D-046	SI100N750	TCN-100		N750L-101	5TCU-T1	AF Coupling
C15	.5-3		31B-206		829-3				Variable Trimmer
C16	.5-3		31B-206		829-3				Variable Trimmer
C17	20		13D-042	SI20NP0	TCZ-20		NP0K-200		Osc. Grid Cap.
C18	10		13D-064	SI10N750	TCN-10		N750K-100	5TCU-Q1	Fixed Trimmer
C19A	1000		13D-071	BPD-2X001	DD-2-102		812-001	5HK-2D1	Osc. Filament
B	1000								RF Bypass
C20	10		13D-064	SI10NP0	TCZ-10		NP0K-100	5TCU-Q1	Fixed Trimmer
C21	120		13B-033		TCN-120		N750L-121		IF Coupling
C22	1000		47X519	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	AGC Filter
C23	1000		47X519	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	AGC Filter
C24	1000		47X519	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	1st. Video IF Decoupling
C25	1000		47X519	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	1st. Video IF Filament
C26	1000		47X519	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	RF Bypass
C27	91	300			TCZ-91		NP0-333-910		Fixed Trimmer
C28	47	500	47X565	1469-00005	TCZ-47	5R5Q5	NP0L-470	MS-45	IF Coupling
C29	1000		47X519	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	AGC Filter
C30	1000		47X519	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	2nd. Video IF Decoupling
C31	1000		47X519	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	2nd. Video IF Filament
C32	1000		47X519	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	RF Bypass
C33	51	100		1469-00005	TCZ-51	5R5Q5	NP0-333-510	MS-45	Fixed Trimmer
C34	47	500	47X565	1469-00005	TCZ-47	5R5Q5	NP0L-470	MS-45	IF Coupling
C35	1000		47X519	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	3rd. Video IF Decoupling
C36	1000		47X519	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	3rd. Video IF Fil.
C37	1000		47X519	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	3rd. Video IF Cathode
C38	47	100	47X565	1469-00005	TCZ-47	5R5Q5	NP0L-470	MS-45	Fixed Trimmer
C39	1000		47X519	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	RF Bypass
C40	47	500	47X565	1469-00005	TCZ-47	5R5Q5	NP0L-470	MS-45	IF Coupling
C41	1000		47X519	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	Video Det. Fil.
C42	5		47X562	SI5NP0	TCZ-4.7		NP0K-050		Video Det. Filter
C43	360	500	47X568		TCN-360		N750L-361		Fixed Trimmer
C44	68		47X599		TCZ-68		NP0-333-680	5TCC-Q68	Video Coupling
C45	.047	400	46X397	P488-047	DF-503	PTE4S5		4TM-S47	Video Coupling
C46	.1	600	46X403	P688-1	DF-104	PTE6P1		6TM-P1	Video Coupling
C47	.047	400	46X397	P488-047	DF-503	PTE4S5		4TM-S47	Video Coupling
C48	.1	200	B65104	P288-1	DF-104	PTE4P1		2TM-P1	Picture Tube Cathode
C49	.015	600	F65153	P688-015		PTE6S15		6TM-S15	Vert. Sweep Coupling
C50	.05	600	F65503	P688-05	DF-503	PTE6S5		6TM-S5	Integrator Net.
C51	.5	200	B65503	P288-05	DF-503	PTE4S5		2TM-S5	AGC Filter
C52	1000	500	47X569	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Horiz. Sweep Coupling
C53	1.5		47X584	SI1.5NP0	TCZ-1.5		NP0K-1R5		Sound IF Coupling
C54	10000		47X595	BPD-01	DD-103	1D3S1	821-01	5HK-S1	AVC Filter
C55	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st. Sound IF Decoupling
C56	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	RF Bypass

TV PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No	RATING CAP	RATING VOLT	REPLACEMENT DATA: TRUETONE PART No	AEROVOX PART No	CENTRALAB PART No	CORNELL DUBILIER PART No	ERIE PART No	SPRAGUE PART No	IDENTIFICATION CODES AND INSTALLATION NOTES
C57	5000		4X5307	B9D-505	DD-502	CD5D5	811-005	5HK-D5	2nd. Sound IF Decoupling
C58	5000		4X5307	B9D-505	DD-502	CD5D5	811-005	5HK-D5	2nd. Sound IF Cathode
C59	5000		4X5307	B9D-505	DD-502	CD5D5	811-005	5HK-D5	2nd. Sound IF Filament
C60	470	500	4X5325	D6-471	D6-471	SR5T5	GP2K-471	MS-35	RF Bypass
C61	470	500	4X5325	D6-471	D6-471	SR5T5	GP2K-471	MS-35	De-emphasis
C62	05	400	4X5397	P488-05	D9-503	PTR4S5		4TM-S5	Sync. Coupling
C63	1	400	D65104	P488-1	DF-104	PTR4S5		4TM-P1	Sync. Coupling
C64 A	002			P488-002		PTR6D2	GP2-333-202		Vert. Integrator Network
B	005		♦ 78X7	P488-005	♦ PC-100	PTR6D5	GP2-333-502	♦ 101C1	Vert. Integrator Network
C	005			P488-005		PTR6D5	GP2-333-502		Vert. Integrator Network
C65	4700	500	4X5543	1464-005	D6-472	CDR5D5	GP2-333-472	MS-25	Vert. Sync. Coupling
C66	05	600	D65503	P668-05	DF-503	PTR6S5		6TM-S5	Vert. Discharge
C67	25	400	D65254	P488-25		GT4P25		4TM-P25	Vert. Sweep Coupling
C68	1000		4X5547	S1000	D6-102	1W5D1	GP2L-102	5HK-D1	Horiz. Sync. Coupling
C69	1000		4X5510	S1000	D6-102	1W5D1	GP2L-102	5HK-D1	Horiz. Sync. Coupling
C70	01	400	D65103	P468-01	D6-103	PTR4S5	GP2-333-103	4TM-S5	Integrator Network
C71	05	300	D65503	P288-05	DF-503	PTR4S5		2TM-S5	Horiz. Feedback
C72	005	600	D65502	P668-005	D6-502	PTR6D5	GP2-333-502	6TM-D5	AFC Filter
C73	25	300	D65254	P488-25		GT2P25		2TM-P25	AFC Filter
C74	05	200	D65503	P288-05	D6-503	PTR4S5		2TM-S5	AFC Filter
C75	4700	500	4X5543	1464-005	D6-472	CDR5D5	GP2-333-472	MS-25	Fixed Trimmer
C76	330	500	4X5570	1469-00005		5R5-S5		MS-45	Horiz. MV Feedback
C77	47	500	4X5565	1469-00005		5R5-S5		MS-45	Horiz. MV Feedback
C78	25	400	D65254	P488-25		GT4P25		4TM-P25	Horiz. MV Decoupling
C79	470	500	4X5325	5R5T5		5R5T5		MS-35	Horiz. Discharge *
C80	390	500	4X5571	1469-0004		5R5T4		MS-34	Horiz. Sweep Coupling
C81	130	500	RCM20A131K	1469-00015		5W5T5			Horiz. Output Grid
C82	05	600	D65503	P668-05	DF-503	PTR6S5		6TM-S5	Horiz. Output Screen
C83	1000		4X5519	S1000	D6-102	1W5D1	GP2L-102	5HK-D1	Horiz. Output Screen
C84	05	400	4X5397	P488-05		PTR4S5		4TM-S5	Fixed Trimmer
C85	03	400	D65503	P468-03		PTR6S5		6TM-S3	Damper Filter
C86	25	400	D65254	P488-25		GT4P25		4TM-P25	Horiz. Sweep Coupling
C87	500	2000	4X5560	RV-20C	TV3-502				HV Filter
C88A	10000		♦ 78X8	BPD-01	DD-3-103	UD3S1	821-01	5HK-S1	Line Filter
B	10000			BPD-01		UD3S1	821-01	5HK-S1	Line Filter

♦ Items C64A, C64B, C64C, R68A, R68B, R68C are combined on one unit.
• Some models use 430MMF. in this application

CONTROLS

ITEM No	RATING RESIST-ANCE	RATING WATTS	REPLACEMENT DATA: TRUETONE PART No	IRC PART No	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	3000Ω	1	40X337		AG-15-S	B-12	Contrast Control
B	Shaft		Not req.		FS-3	Not req.	Attach to R1A per instructions
R2A	25KΩ	1	40X336	Q11-120	AG-40-S	B-26	Horiz. Hold Control
B	Shaft		Not req.		KSS-3	Not req.	Attach to R2A per instructions
R3A	500KΩ	½	40X333	Q11-133	AG-58-S	B-59	Brightness Control
B	Shaft		Not req.	Not req	KSS-3	Not req	Attach to R3A per instructions
R4A	5000Ω	1	40X294	Q11-114	AM-15-S		Vert. Linearity Control
B	Shaft		Not req.	PQ	RS-2		Attach to R4A per instructions
C	Bushing		Not req.	S-3	59-186		Attach to R4A per instructions
R5A	1.5Meg	1	40X334	Q11-239	AG-84-S	AN-83	Height Control
B	Shaft		Not req.	Not req.	FKS-1/4	AK-1	Attach to R5A per instructions
R6	4000Ω	2	40X335				Focus Control - Wire Wound
R7A	1.5Meg	1	40X334	Q11-138	AG-83-S	AN-75	Vert. Hold Control
B	Shaft		Not req.	Not req	KSS-3	AK-4	Attach to R7A per instructions
R8A	150KΩ	1	40X331	Q11-130 ♯	AG-52-S		Horiz. Drive Control - See Note 1
B	Shaft		Not req.	PQ	FKS-1/4		Attach to R8A per instructions

Note 1 Some sets use 300KΩ control shunted by 330KΩ resistor
♯ When using this replacement control 390KΩ resistor across two outside terminals.

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED
R9	3900Ω	1	12A-048	BTS-3900	Antenna Coil Shunt
R10	68KΩ	20% 1	12A-039	BTS-68K	AGC Network - See Note 3
R11	2200Ω	10% 1	12A-049	BTS-2200	RF Amp. Decoupling
R12	10KΩ	20% 1	12A-040	BTS-10K	RF Coil Shunt
R13	4700Ω	20% 1	12A-042	BTS-4700	Mixer Grid
R14	220KΩ	20% 1	12A-041	BTS-220K	Mixer Grid
R15	15KΩ	20% 1	12A-021	BTS-15K	Mixer Plate
R16	10KΩ	1	12A-040	BTS-10K	Osc. Grid
R17	4700Ω	1	12A-042	BTS-4700	Osc. Plate
R18	1000Ω	1	B85102	BTS-1000	AGC Network
R19	1000Ω	1	B85102	BTS-1000	AGC Network
R20	3900Ω	5% 1	B83392	BTS-3900-5%	1st. Video IF Amp. Grid
R21	47Ω	5% 1	B83470		1st. Video IF Amp. Cathode
R22	1000Ω	1	B85103	BTS-1000	1st. Video IF Amp. Decoupling
R23	10KΩ	5% 1	B83103		2nd. Video IF Amp. Grid
R24	47Ω	5% 1	B83470		2nd. Video IF Amp. Cathode
R25	1000Ω	1	B85102	BTS-1000	2nd. Video IF Amp. Decoupling
R26	15KΩ	1	B83153		3rd. Video IF Amp. Grid
R27	180Ω	1	B84181	BTS-180	3rd. Video IF Amp. Cathode
R28	1500Ω	1	B84152	BTS-1500	3rd. Video IF Amp. Decoupling
R29	22KΩ	1	B84223	BTS-22K	3rd. Video IF Amp. Plate Choke Shunt
R30	2700Ω	5% 1	C83273	BTA-2700-5%	Voltage Divider
R31	33KΩ	1	B84333	BTS-33K	Keyed AGC Grid
R32	47KΩ	1	B84473	BTS-47 K	Keyed AGC Plate
R33	470KΩ	1	B84474	BTS-470K	AGC Network
R34	10KΩ	1	B84103	BTS-10K	AGC Network
R35	5600Ω	1	B84562	BTS-5600	Video Det. Diode Load
R36	5800Ω	1	B84582	BTS-5600	1st. Video Amp. Plate - See Note 4
R37	10KΩ	5% 1	B83103	BTS-10K-5%	Isolation
R38	1Meg	30% 1	B85105	BTS-1Meg	1st. Sync. Sep. Grid
R39	22KΩ	1	B84223	BTS-22K	1st. Sync. Sep. Cathode
R40	12KΩ	1	B84123	BTS-12K	1st. Sync. Sep. Plate
R41	1Meg	1	B84105	BTS 1Meg	2nd. Video Amp. Grid
R42	100Ω	1	B84101	BTS-100	2nd. Video Amp. Cathode
R43	4700Ω	5% 1	C83473	BTA-4700-5%	2nd. Video Amp. Plate
R44	10KΩ	5% 1	B83103	BTS-10K-5%	Isolation

RESISTORS (CONT.)

ITEM No	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA: TRUETONE PART No	IRC PART No	IDENTIFICATION CODES
R45	1Meg	1	B84105	BTS-1Meg	DC Restorer Diode Load
R46	100KΩ	1	B84104	BTS-100K	Picture Tube Grid
R47	33KΩ	1	B84333	BTS-33K	Picture Tube Cathode
R48	100KΩ	1	B84104	BTS-100K	Voltage Divider
R49	47KΩ	1	B84473	BTS-47K	Voltage Divider
R50	3300Ω	20% 1	B85333	BTS-3300	Vert. Retrace Blanking Network
R51	100Ω	1	B84101	BTS-100	1st. Sound IF Amp. Cathode
R52	1000Ω	1	B84102	BTS-1000	1st. Sound IF Amp. Decoupling
R53	180Ω	1	B84181	BTS-180	2nd. Sound IF Amp. Cathode
R54	1000Ω	1	B84102	BTS-1000	2nd. Sound IF Amp. Decoupling
R55	470KΩ	1	B84474	BTS-470K	AVC Network
R56	5600Ω	1	B84562	BTS-5600	Ratio Det Diode Load
R57	5600Ω	1	B84562	BTS-5600	Ratio Det Diode Load
R58	68KΩ	1	B84683	BTS-68K	De-emphasis
R59	120Ω	1	B84121	BTS-120	Balancing
R60	2200Ω	1	B84222	BTS-2200	Isolation
R61	47KΩ	1	B84473	BTS-47K	2nd. Sync. Sep. Cathode
R62	820KΩ	1	B84824	BTS-820K	2nd. Sync. Sep. Plate
R63	3300Ω	5% 1	B83332	BTS-3300-5%	Sync. Phase Inv. Cathode
R64	3300Ω	5% 1	B83332	BTS-3300-5%	Sync. Phase Inv. Plate
R65	3300Ω	5% 1	B83332	BTS-3300-5%	Sync. Phase Inv. Plate
R66A	22KΩ	1	76X7 ♦	BTS-22K	Integrator
B	8200Ω	1		BTS-8200	Integrator
C	8200Ω	1		BTS-8200	Integrator
R67	1Meg	1	B84105	BTS-1Meg	Vert. Osc. Grid
R68	1.5Meg	1	B84155	BTS-1.5Meg	Vert. Osc. Plate
R69	4700Ω	5% 1	B83472	BTS-4700-5%	Vert. Peaking
R70	1.8Meg	1	B84185	BTS-1.8Meg	Vert. Output Grid
R71	820Ω	1	B84821	BTS-820	Vert. Output Cathode
R72	6800Ω	2	D84683	BTS-6800	Decoupling - See Note 4
R73	470KΩ	1	B84474	BTS-470K	Bleeder
R74	470KΩ	1	B84474	BTS-470K	Bleeder
R75	100KΩ	1	B84104	BTS-100K	Horiz. Phase Det. Diode Load
R76	100KΩ	1	B84104	BTS-100K	Horiz. Phase Det. Diode Load
R77	4.7 Meg	1	B84475	BTS-4.7Meg	Horiz. Phase Det. Diode Load
R78	27KΩ	1	B84273	BTS-27K	Horiz. Phase Det. Diode Load
R79	15KΩ	1	C84153	BTA-15K	Horiz. Feedback
R80	470KΩ	1	B84474	BTS-470K	Horiz. AFC Filter
R81	33KΩ	1	B84333	BTS-33K	Horiz. AFC Filter
R82	1200Ω	1	B84122	BTS-1200	Horiz. MV Cathode
R83	5600Ω	1	B84562	BTS-5600	Horiz. MV Plate
R84	82KΩ	1	B84823	BTS-82K	Horiz. MV Grid
R85	180KΩ	1	B84184	BTS-180K	Horiz. MV Plate
R86	47KΩ	20% 1	B85473	BTS-47K	Horiz. MV Plate
R87	330KΩ	5% 1	B83334	BTS-330K-5%	Horiz. Drive Control Shunt - See Note 2
R88	150Ω	1	B84151		Parasitic Suppressor
R89	1Meg	1	B84105	BTS-1Meg	Horiz. Output Grid
R90	150Ω	2	D84151	BW-2-150	Horiz. Output Cathode
R91	10KΩ	½	43X247	1 3/4A-10K	Horiz. Output Screen - Wire Wound
R92	2.5Ω	2	43X239	BW - 2.5.1	HV Rect. Filament
R93	1Meg	20% 1	C85105		HV Filter
R94	100KΩ	½	B84104	BTS-100K	1st. Sound IF Amp. Grid - See Note 2
R95	10KΩ	5	43X247	1 3/4A-10K	Bleeder - Wire Wound
R96	7500Ω	15	43X256	2D-7500	Bleeder - Wire Wound
R97	1500Ω	15	43X261	2D-1500	Voltage Divider - Wire Wound
R98	500Ω	10	43X245	1 3/4A-500	Voltage Divider - Wire Wound
R99	500Ω	5	43X257	1 3/4A-500	Focus Coil Shunt - Wire Wound
R100	10KΩ	1	B83103	BTS-10K	Horiz. Peaking
R101	150Ω	1	B83151	BTS-150	1st. Video IF Amp. Decoupling

♦ Items R66A, R66B, R66C, C64A, C64B, and C64C are combined into one unit.
Note 2 Not used in all models.
Note 3 Some models use 47KΩ resistor in this application.
Note 4 Some models use parallel resistors in this application to obtain desired value.

TRANSFORMER (POWER)

ITEM No	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC	750VCT	5VAC	6.3VAC	53X318		P-3059	TP-380
	② 2.5A	.250ADC	③ 3A	① 1.2A				
				SEC. 4				
				6.3VAC				
				② 8A				

TRANSFORMER (SWEEP CIRCUITS)

ITEM No	RATING DC RESISTANCE PRI	RATING DC RESISTANCE SEC.	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	200Ω	1.15KΩ	54X7	A-8123 ①	A-3000 ①	TBO-2 ①	Vert. Block Osc. Trans.
T3	185Ω	10.6Ω	53X319		HVO-7 and		Horiz. Output Trans.
	Tap 12Ω	Tap .3Ω, 3.1Ω and 5Ω			MWC-1		
		SEC. 2 4.9Ω					
		SEC. 3 0Ω					
T4	1KΩ		51X151	A-8112	A-3037 ①	TSO-5 ①	Vert. Output Trans.
	Tap 121Ω						
T5A	20Ω		9A2194	DY-8	MDF-70		Horiz. Deflection Coils
B	50Ω						Vert. Deflection Coils
T6	880Ω		9A2189				Focus Coil

① Drill one new mounting hole.

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	RATINGS INDUCTANCE (0 CURRENT 1000 CPS)	REPLACEMENT DATA: TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	250A	52Ω	2 Henries	52X68	C-2326	C-2991	TR-3300 ①	Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: TRUETONE PART No.	NOTES
L2	Ant. Coil	0Ω	0Ω	9A3119	Channel # 2
L3	Fil. Choke	0Ω			
L4	RF, Mixer Grid and Osc. Coil	0Ω		9A3131	Channel # 2
L5	Fil. Choke	0Ω			
L6	1st. Video IF	.7Ω		31A-095	
L7	Fil. Choke	0Ω		9A2033	
L8	2nd. Video IF	.3Ω		9A3166	Includes Trap .4Ω
L9	Fil. Choke	0Ω		9A2033	
L10	3rd. Video IF	.2Ω		9A3168	Includes Trap 0Ω
L11	Cathode Trap	0Ω	.1Ω	9A2189	
L12	Fil. Choke	0Ω		9A2033	
L13	RF Choke	2.5Ω		9A1979	
L14	4th. Video IF	.2Ω		9A3167	Includes Trap .1Ω
L15	Peaking	9Ω		36A1	100 Microhenries (Yellow Dot)
L16	Peaking	35Ω		36A8	750 Microhenries (Green Dot)
L17	Peaking	15Ω		36A7	190 Microhenries wound on 22KΩ resistor
L18	Peaking	18Ω		36A6	215 Microhenries wound on 33KΩ resistor
L19	4.5MC Trap	.3Ω		9A3074	
L20	Peaking	14Ω		36A5	185 Microhenries wound on 47KΩ resistor
L21	Peaking	15Ω		36A2	190 Microhenries (White Dot)
L22	1st. Sound IF	2.5Ω		9A3108	
L23	2nd. Sound IF	1.5Ω	1.6Ω	9A2170	
L24	Ratio Det Trans.	3Ω	.3Ω	9A2171	Tap. .7Ω
L25	Horiz. Osc	50Ω		9A2096	
L26	Width Coil	6Ω		9A2183	
L27	Horiz. Lin.	5.8Ω		9A2172	Tap 1.5Ω

† Parallel with 22KΩ resistor.
▲ Parallel with 47KΩ resistor.

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA: TRUETONE PART No. FUSE	TRUETONE PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	REMARKS
M1	3AG Slo Blo	250	16X147	16X146	313.250	357001	

MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M2	RF Tuner	25A1060	
M3	Ion Trap	2A407	
	Knob	10A741	(Channel Selector)
	Knob	10A742	(Fine Tuning)
	Knob	10A756	(Contrast)
		9A2119	Channel # 2
		9A2120	Channel # 3
		9A2121	Channel # 4
		9A2123	Channel # 5
		9A2123	Channel # 6
		9A2124	Channel # 7
	Antenna Coil	9A2125	Channel # 8
		9A2126	Channel # 9
		9A2127	Channel # 10
		9A2128	Channel # 11
		9A2129	Channel # 12
		9A2130	Channel # 13
		9A2131	Channel # 2
		9A2132	Channel # 3
		9A2133	Channel # 4
		9A2134	Channel # 5
		9A2135	Channel # 6
	RF, Mixer Grid & Osc. Coils	9A2136	Channel # 7
		9A2137	Channel # 8
		9A2138	Channel # 9
		9A2139	Channel # 10
		9A2140	Channel # 11
		9A2141	Channel # 12
		9A2142	Channel # 13

RADIO PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TRUETONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V22	FM RF Amplifier-FM Mixer	12AT7	12AT7	9A	
V23	FM Oscillator-AM Converter	6BE6	6BE6	7CH	
V24	1st. FM-AM IF Amp	6BA6	6BA6	7BK	
V25	2nd. FM IF Amp.	6BA6	6BA6	7BK	
V26	Ratio Detector	6AL5	6AL5	6BT	
V27	AM Detector-AVC-AF Amplifier	6AV6	6AV6	7BT	
V28	Power Output	6V6GT	6V6GT	7AC	
V29	Rectifier	5Y3G	5Y3G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TRUETONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C89A	40	350	45X359	AFH4-52		UP44235C		TVL-4605	● Filter
B	40	350							■ Filter
C	20	350							▲ Filter
D	20	25							Output Cathode
C90	5	100	45X361	PRS150/4		BR415		TVA-1402	Stabilizing Cap.
C91	330	500	47X470	1469-00035	D6-331		GP2K-331	1FM-335	RF Coupling
C92	500		47X508	SI500	D6-501	5W5T5	GP2K-501	5GA-T5	RF Amp. Cathode
C93	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	RF Amp. Grid
C94A	100		76X4	SI100	D6-101	5W5T1	GP1K-101	5GA-T1	RF Coupling
B	100			SI100	D6-101	5W5T1	GP1K-101	5GA-T1	RF Coupling
C95	130		47X559		TCN-130		N750L-131		Fixed Trimmer
C96	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Osc. Anode
C97	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	Conv. Plate
C98	2.2		47X557		TCZ-2.2		NP0K-2R2		Osc. Feedback
C99	30		47X558		TCN-30		N750K-300		Osc. Grid Cap.
C100	10		47X523	SI10NP0	TCZ-10		NP0K-100	5TCC-Q1	Fixed Trimmer
C101	2.2		47X557		TCZ-2.2		NP0K-2R2		Osc. Coupling
C102	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	AVC Filter
C103	.05	200	B66503	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C104	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st. IF Amp. Plate
C105	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	1st. IF Amp. Screen
C106	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	2nd. FM IF Amp. Dec
C107	5000		47X507	BPD-005	DD-502	1D5D5	811-005	5HK-D5	2nd. FM IF Amp. Fil.
C108	220	500	47X468	1469-00025	D6-221	5R5T25	GP2K-221	1FM-325	Diode Load Cap.
C109	2700		47X492	SI2700	D6-272	5R5D3	GP2-333-272	1FM-23	De-emphasis
C110A	50		47X112	SI50	D6-500	5W5Q5	GP1K-500	5GA-Q5	Diode RF Filter
B	50			SI50	D6-500	5W5Q5	GP1K-500	5GA-Q5	Diode RF Filter
C111	.05	200	B66503	P288-05	DF-503	PTE4S5		2TM-S5	Audio Coupling
C112	.005	400	D66502	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	Audio Coupling
C113	68	500	47X471	1469-00007	D6-680	5W5Q7	GP1K-680	MS-47	Tone Comp.
C114	.02	200	B66203	P488-02	DF-203	PTE4S2		2TM-S2	Tone Comp.
C115	.01	200	B66103	P488-01	DF-103	PTE4S1	GP2-333-103	4TM-S1	Tone Comp.
C116A	.01				†PC-80				Audio Coupling
B	250								AF Amp. Plate
C									Output Grid
C117	.1	400	D66104	P488-1	DF-104	PTE4P1		4TM-P1	RF Bypass
C118	.001	800	H66102	P1088-001		PTE16D1		MB-D1	Output Plate

† Items C116A, C116B, C116C, R124A, R124B are combined in one unit.
When replacing separately, C116B and C116C should total 250MMF.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R102A	500KΩ	½	40X311	Q13-133	AG-60-Z	BSK-60	Tone Control
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R102A per instructions
R103A	500KΩ	½	36X381	Q13-133X	AK-80	BTSK-66-S	Volume Control
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R103A per instructions
C	Switch		Not req.	76-1	SWB	Not req.	Attach to R103A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TRUETONE PART No.	IRC PART No.	IDENTIFICATION CODES
R104	47Ω	½	B85470		Parasitic Suppressor
R105	22KΩ	½	B85223	BTS-22K	Osc. Grid
R106	1000Ω	½	B85102	BTS-1000	Osc. Anode
R107	100KΩ	½	B84104	BTS-100K	FM RF Amp. Grid
R108	220Ω	½	B85221	BTS-220	FM RF Amp. Cathode
R109	470KΩ	½	B85474	BTS-470K	FM Mixer Grid
R110	1Meg	½	B85105	BTS-1Meg	AVC Network
R111	68Ω	½	B85680		1st. IF Amp. Cathode
R112	6800Ω	½	B84682	BTS-6800	1st IF Amp. Screen
R113	1000Ω	½	B85102	BTS-1000	1st. IF Amp. Decoupling
R114	68Ω	½	B85680		2nd. FM IF Amp. Cathode
R115	1000Ω	½	B85102	BTS-1000	2nd. FM IF Amp. Decoupling
R116	3.9Ω	½	43X233		Ratio Det. Diode Filament - See Note 5
R117	6800Ω	½	B84682	BTS-6800	Ratio Det. Diode Load
R118	6800Ω	½	B84682	BTS-6800	Ratio Det. Diode Load
R119	27KΩ	½	B84273	BTS-27K	De-emphasis
R120	100KΩ	½	B85104	BTS-100K	AVC Network
R121	270KΩ	½	B85274	BTS-270K	AVC Network
R122	47KΩ	½	B84473	BTS-47K	Diode Filter
R123	15KΩ	½	B85153	BTS-15K	Tone Compensation
R124	10Meg	½	B85106	BTS-10Meg	AF Amp. Grid
R125	47KΩ	½	B85473	BTS-47K	AF Amp. Plate Decoupling

RADIO PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (CONT.)

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	TRUETONE PART No.	IRC PART No.	
R126A	470KΩ	½		BTS-470K	AF Amp. Plate
B	470KΩ	½		BTS-470K	Output Grid
R127	270Ω	1½	B84271	BTS-270	Output Cathode
R128A	1000Ω	4	43X224		Filter - Wire Wound
B	1400Ω	6			Filter - Wire Wound

† Items R126A, 126B, C116A, C11B, and C116C are combined into one unit.
Note 5 Some models use 3.6Ω resistor in this application.

TRANSFORMER (POWER) (RADIO CHASSIS)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T7	117VAC @ .575A	520VCT .085A	5VAC @ 2A	6.3VAC @ 2.5A	53X280			PH-70 ②

② Add series resistor to reduce plate voltage.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		TRUETONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T8	5.6KΩ	4.3Ω	440Ω	.85Ω	51X134	A-3877 ①	A-2930 ①	RO-9 ①	① Drill one new mounting hole

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	V. C. IMP.	TRUETONE PART No.	VIKING PART No.	QUAM PART No.	
SP1	PM	4.3Ω	12A502	12J12	12A4A	
	CONE DIA.	V. C. DIA.				
SP2	11 7/8"	1"				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA			NOTES
		PRI.	SEC.	TRUETONE PART No.		IRC PART No.	
L28	FM Ant. Coil	.2Ω		35A9		CLA	.47 Microhenry
L29	RF Choke	3Ω		35A8		CLA	3.3Microhenries
L30	FM-RF Coil	0Ω		9A2066			
L31	FM Osc.	0Ω		9A2067			
L32	Parasitic Suppressor	0Ω		9A2103			
L33	AM Loop Ant.	1.4Ω	.1Ω	9A2146			
L34	Cathode Choke	1.8Ω		35A5		CLA	2.2Microhenries
L35	AM Osc.	.4Ω	5.3Ω	9A2065			
L36	1st. FM IF	.9Ω	.9Ω	9A2060			
L37	1st. AM IF	11Ω	13Ω	9A2062			
L38	2nd. FM IF	.9Ω	.9Ω	9A2061			
L39	2nd. AM IF	12Ω	13Ω	9A2063			
L40	Ratio Det. Trans.	1.2Ω	.1Ω	9A2161			Tap .3Ω

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA								REMARKS
	TRUETONE PART No.	ASTATIC PART No.		SHURE PART No.		ELECTRO-VOICE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M4	SH-P-81	AC-AG-J	A-AG	W26B	A66U	33	O-2 or S-2	

ASTATIC, SHURE, AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED. FOR ORIGINAL CARTRIDGE NEEDLE REPLACEMENTS SEE BELOW.

PHONO NEEDLE

(FOR REPLACEMENT IN ORIGINAL EQUIPMENT CARTRIDGE)

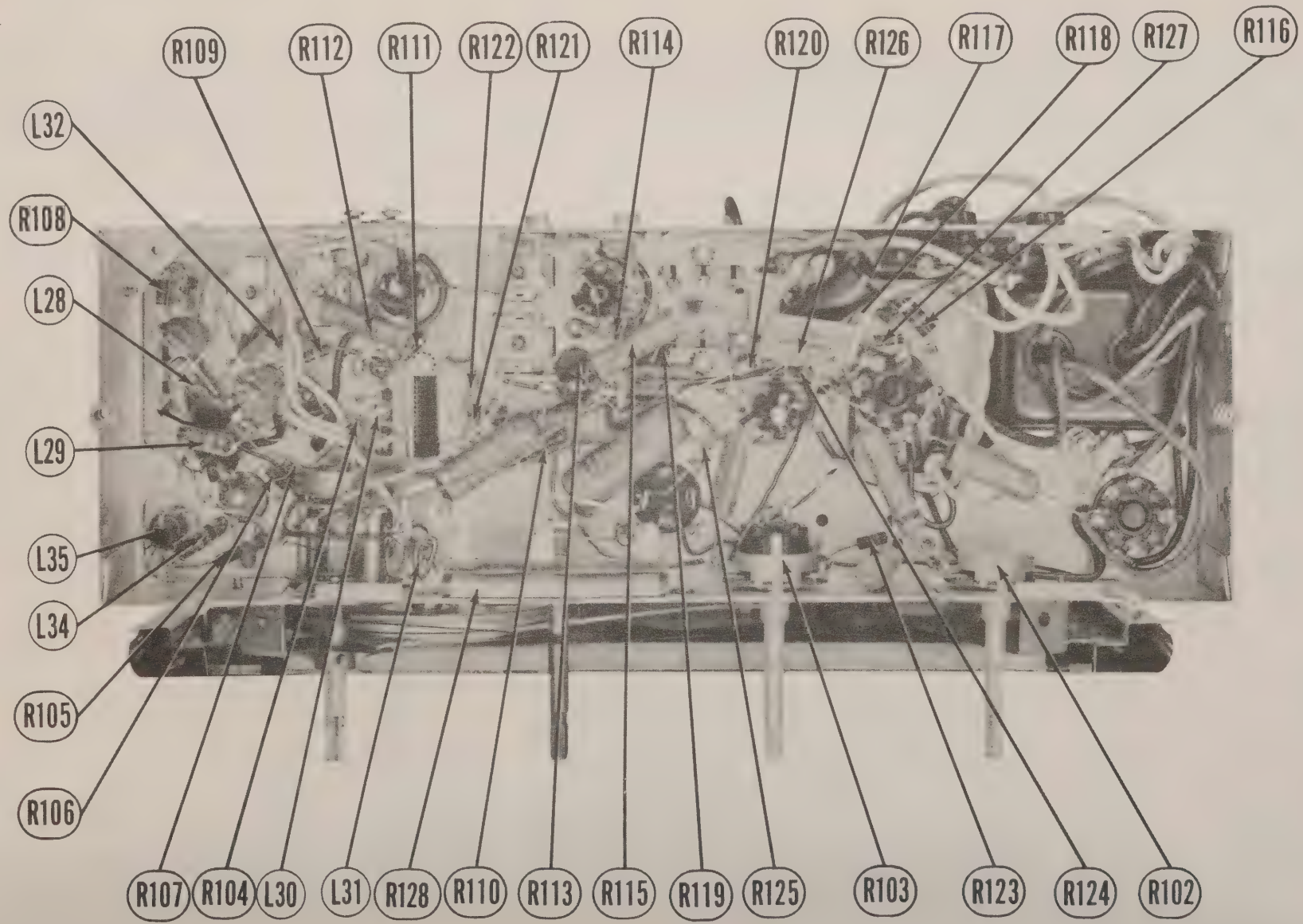
ITEM No.	REPLACEMENT DATA		REMARKS
	TRUETONE PART No.	WALCO PART No.	
M5	85-35	W-20AGA W-20AGS	Alloy Sapphire

DIAL LIGHTS

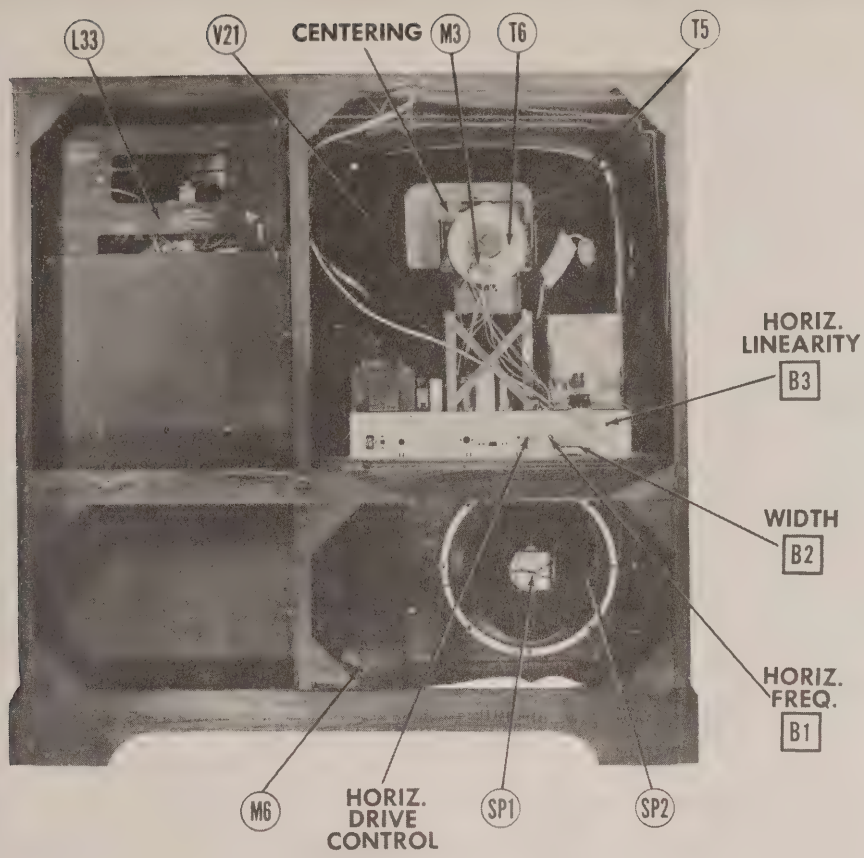
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					TRUETONE PART No.		
M6	Bayonet	7.5	.20	White	7A32		Type # 51
M7	Bayonet	6-8	.15	Brown	7A103		Type # 47
M8	Bayonet	6-8	.15	Brown	7A103		Type # 47

MISCELLANEOUS

ITEM No.	PART NAME	TRUETONE PART No.	NOTES
M9	Switch	2A397	(Function) TV Phono AM FM
M10	Tuning Cap	14A209	(19-522MMF - RF Section) (38-220MMF - Osc. Section)
A33	Trimmer	17A256	2-24MMF (AM Ant. Adj.)
A40	Trimmer	17A255	1-8MMF (FM Osc. Adj.)
	Knob	10A759	Tuning



RADIO CHASSIS - BOTTOM VIEW - RESISTOR IDENTIFICATION



CABINET–REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.
Turn the horizontal hold control to the mid-position of its range.
Adjust the horizontal frequency slug, (B1), until the picture synchronizes horizontally. The picture should pull into synchronization after momentarily interrupting the signal, over at least 90° of the hold control range.
Turn the horizontal drive control clockwise until bright vertical bars appear in the left center of the picture. Then counter-clockwise just enough to remove the bars.
Adjust the width slug, (B2), until the picture is slightly wider than necessary to fill the mask horizontally.
Adjust the horizontal linearity slug, (B3), until the picture is symmetrical from left to right.

DISASSEMBLY INSTRUCTIONS

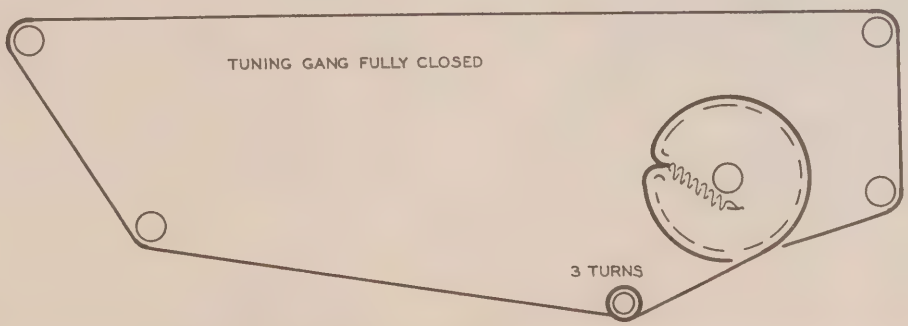
TELEVISION CHASSIS REMOVAL:

1. Remove three push-on type control knobs.
2. Remove four wood screws from rear cover. Remove rear cover.
3. Disconnect built-in antenna.
4. Remove antenna terminal strip.
5. Disconnect TV audio plug.
6. Remove four metal bolts from chassis.
7. Disconnect speaker.
8. Remove four 11/32" from speaker. Remove speaker.

NOTE: For picture tube removal it is necessary to remove the chassis as outlined above.

RADIO CHASSIS REMOVAL:

1. Remove four push-on type control knobs.
2. Remove four wood screws from rear cover. Remove rear cover.
3. Disconnect AM loop.
4. Disconnect FM antenna.
5. Remove jewel light.
6. Disconnect phono jack.
7. Disconnect phono power plug.
8. Remove two 1/4" hex head bolts from chassis. Remove chassis.



DIAL CORD STRINGING

ZENITH
MODEL H503 (Ch. 5H41)

ZENITH
MODEL H503 (Ch. 5H41)

ZENITH
MODEL H503 (Ch. 5H41)

TRADE NAME	Zenith, Model H503, Y (Ch. 5H41)
MANUFACTURER	Zenith Radio Corp., 6001 Dickens Ave., Chicago, Illinois
TYPE SET	Three Power Operated Portable Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 1U4 RF Amp., 1L6 Converter, 1U4 IF Amp., 1S5 or 1U5 Det.-AVC-AF, 3V4 Power Output
POWER SUPPLY	110-120 Volts AC-DC or 9 Volts "A" Supply and 90 Volts "B" Supply in Pack Form
RATING	.15 Amp. at 117 Volts AC or 56MA at 9 Volts DC and 13 MA at 90 Volts DC
TUNING RANGE—BROADCAST	535-1620KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, turn tuning capacitor fully closed and set pointer to last reference mark at low frequency end of dial.
Use isolation transformer, if available. If not, connect a .1MFD capacitor in series with low side of signal generator and B-.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD.	High side to pin 6, (Grid), of 1L6, (V2). Low side to B-.	455KC (400~ Mod.)	Tuning gang fully open.	Across voice coil.	A1, A2, A3, A4	Adjust for maximum output. If AC power is used without an isolation transformer, reduce dummy antenna to 200MMF to reduce hum modulation.
2.		Loop	1620KC	"	"	A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
3.		Loop	1400KC	Tune for max. signal.	"	A6, A7	"

HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: ZENITH PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RTMA BASE TYPE	INSTALLATION NOTES
V1	RF Amplifier	1U4	1U4	6AR	
V2	Converter	1L6	1L6	7DC	
V3	IF Amplifier	1U4	1U4	6AR	
V4A	Det.AVC-AF	1S5	1S5	6AU	
B	Det.-AVC-AF	1U5	1U5	6BW	Used in later productions
V5	Power Output	3V4	3V4	6BX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	60	150	22-1741			UP6415X20		R1079	▲ Filter
B	40	150							■ Decoupling
C	20	150							▲ Filter
D	200	10							Fil. Filter
C2	220	500	22-182	1468-00025	D6-221	5W5T25	GP2K-221	1FM-325	RF Coupling
C3	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	AVC Filter
C4	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Osc. Anode
C5	.02	200	22-1386	P488-02	DF-203	PTE4S2		2TM-S2	AVC Filter
C6	.005	200	22-319	P688-005	D6-502	PTE6D5	GP2-333-502	6TM-D5	IF Amp. Decoupling
C7	.1	200	22-827	P288-1	DF-104	PTE4P1		2TM-P1	IF Amp. Fil.
C8	.05	200	22-829	P288-05	DF-503	PTE4S5		2TM-S5	AVC Filter
C9	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Audio Coupling
C10	.02	200	22-1386	P488-02	DF-203	PTE4S2		2TM-S2	AF Amp. Screen
C11	100		22-1669	SI100	D6-101	5W5T1	GP1K-101	5GA-T1	AF Amp. Plate
C12	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Audio Coupling †
C13	.0047	600	22-1782	P688-0047	D6-472	PTE6D5	GP2-333-472	6TM-D47	Tone Comp. ‡
C14	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Line Filter
C15	.05	200	22-829	P288-05	DF-503	PTE4S5		2TM-S5	Line Isolation

† Some models use 220MMF. in this application. (Part # 22-182)
‡ Some models use .01MFD. in this application. (Part # 22-1182)

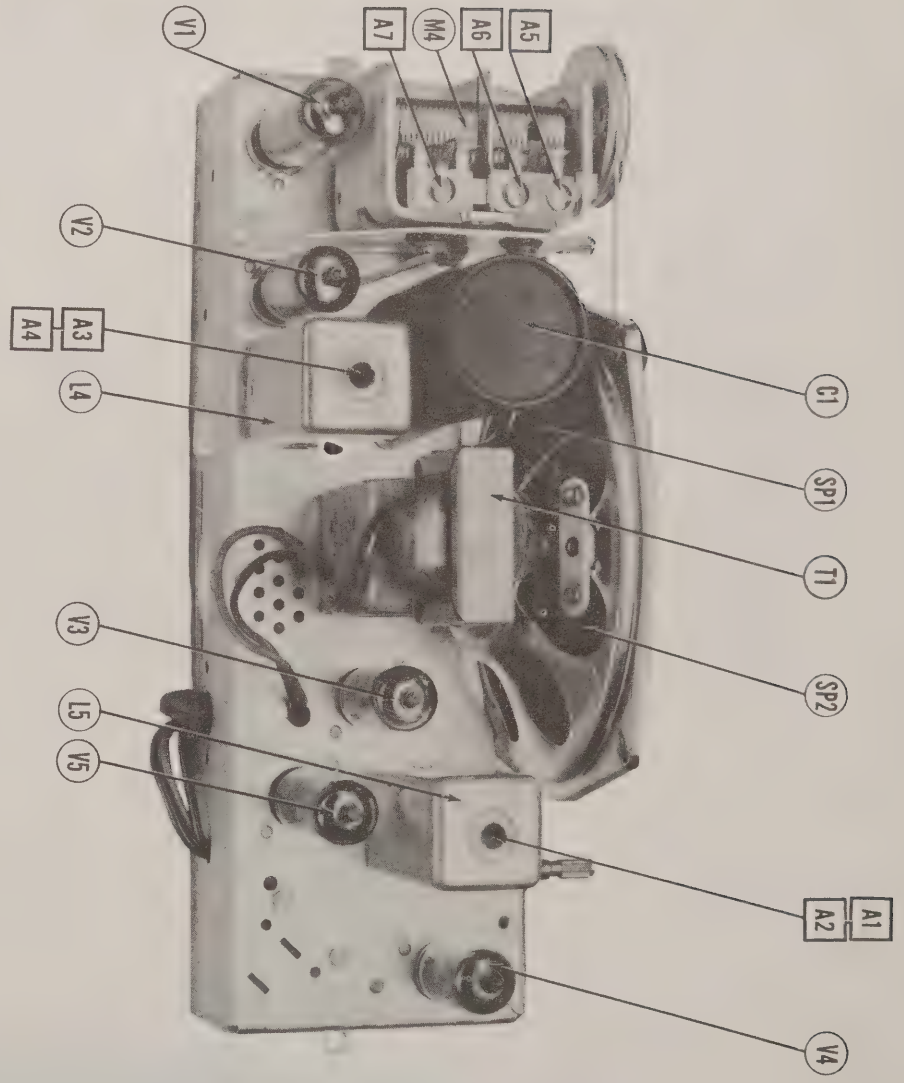
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ZENITH PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	63-2371	Q13-133	AG-60-Z	BSK-60-S	Volume Control
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R1A per instructions
C	Switch		Not req.	76-2	SWB-2	Not req.	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ZENITH PART No.	IRC PART No.	IDENTIFICATION CODES
R2	15KΩ	½	63-1834	BTS-15K	RF Amp. Plate
R3	1Meg	½	63-1912	BTS-1Meg	Mixer Grid
R4	680Ω	½	63-1778	BTS-680	Mixer Cathode
R5	180KΩ	½	63-1880	BTS-180K	Osc. Grid
R6	220Ω	½	63-1758		Parasitic Suppressor
R7	2.2Meg	½	63-1926	BTS-2.2Meg	Bias Network
R8	33KΩ	½	63-1848	BTS-33K	Osc. Anode
R9	5.6Meg	½	63-1943	BTS-5.6Meg	Bias Network
R10	10Meg	½	63-1954	BTS-10Meg	Bias Network
R11	4.7Meg	½	63-1940	BTS-4.7Meg	Bias Network
R12	1000Ω	½	63-1786	BTS-1000	IF Amp. Plate
R13	2.2Meg	½	63-1926	BTS-2.2Meg	AVC Network
R14	220Ω	½	63-1757	BTS-220	AF Amp. Cathode
R15	4.7Meg	½	63-1940	BTS-4.7Meg	AF Amp. Grid
R16	4.7Meg	½	63-1940	BTS-4.7Meg	AF Amp. Screen
R17	820KΩ	½		BTS-820K	AF Amp. Plate - See Note 1
R18	3.3Meg	½	63-1933	BTS-3.3Meg	Output Grid
R19	680Ω	½	63-1778	BTS-680	Output Cathode

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R20	10Meg	½	63-1954	BTS-10Meg	Bias Network
R21	560Ω	1 ½	63-1775	BTS-560	Filter
R22	130Ω	3	63-2018		Surge Limiter
R23A	950Ω	10	63-1362		Filament Dropping
B	950Ω	10			Filament Dropping
R24	100Ω	½	63-1744	BTS-100	Filament String

Note 1 Some models use a 1Meg resistor in this application.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ZENITH PART No.	STANCOR PART No.¹	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	8KΩ	3.4Ω	730Ω	.Ω5	206CZ709 206CZ711 ②	A-3329 ①	A-2932 ①	RO-16 ①	① Bend mounting tabs down file out slots and mount on original brackets. ② Used in late releases

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			ZENITH PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.	49-709	ST803	52A1	② Used in late releases
SP1A	PM	3.4Ω	49-711 ②	Model 525V		
B	PM	3.4Ω		ST803	52A1	
	CONE DIA.	V. C. DIA.		Model 525V		
SP2A	5 1/8"	9/16"	ZC529G			
B	5 1/8"	9/16"	ZC529G ②			

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	ZENITH PART No.		
L1	Loop Ant.	2.3Ω		S-18190		
L2	RF Coil	6.2Ω	6.5Ω	S-15811		Tap 2.8Ω
L3	Osc. Coil	3.2Ω	8.5Ω	S-15812		
L4	1st. IF	26Ω	26Ω	95-1132		
L5	2nd. IF	26Ω	26Ω	95-1133		

SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA			NOTES
	CURRENT	ZENITH PART No.	SYLVANIA PART No.	SELETRON PART No.	
M1	.072A	212-10	NB-5	5M4	

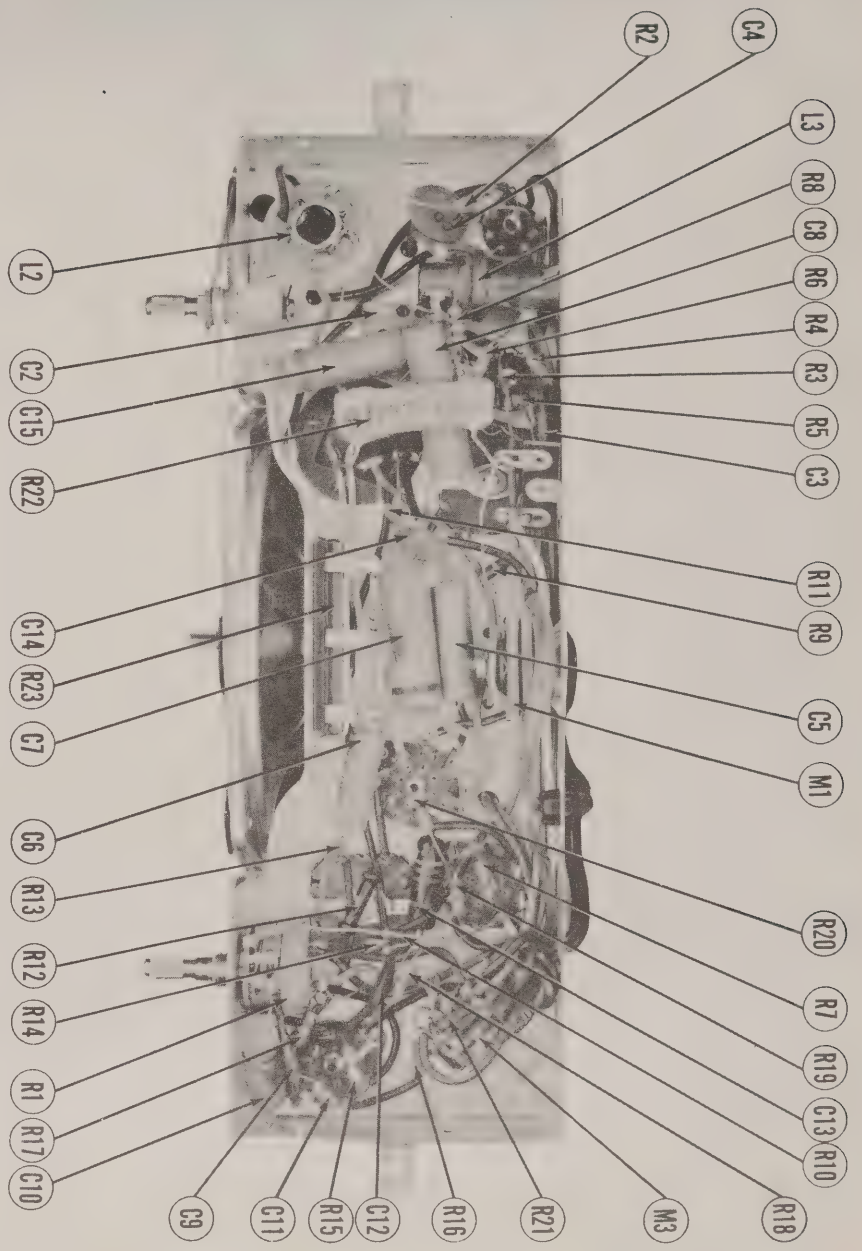
BATTERIES

ITEM No.	VOLTAGE	ZENITH PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M2A	9V "A"	Z909			757			F6A60	
B	90V "B"								

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M3	Switch	85-511	AC/DC-Battery
M4	3 Gang Var. Cap.	22-2323	(35-493MMF, 13-215MMF, 13-152MMF)
	Cabinet	14-1337	Model H503
	Cabinet	14-1338	Model H503Y
	Knob	49-933	
	Dial Pointer	59-261	

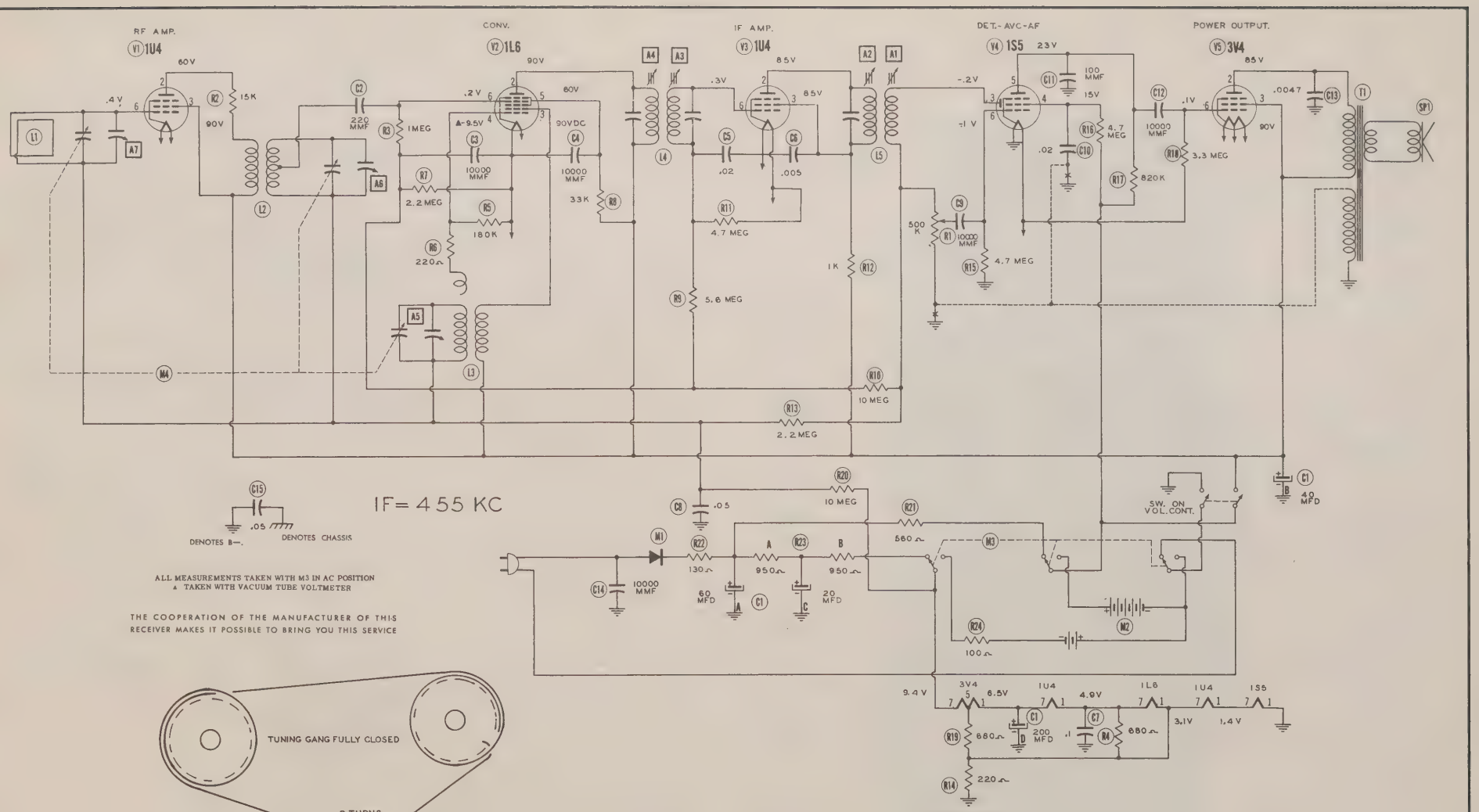
CHASSIS—BOTTOM VIEW



SET 151 FOLDER 12

ZENITH MODEL H503

ZENITH MODEL H503



RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1U4	*	†15KΩ	†690Ω	†33KΩ	*	2.7Meg	*
V 2	1L6	*	†690Ω	†690Ω	180KΩ	†33KΩ	3.2Meg	*
V 3	1U4	*	†1.7KΩ	†1.7KΩ	2.2Meg	*	2.8Meg	*
V 4	1S5	*	†4.7Meg	500KΩ	†4.7Meg	†1Meg	4.7Meg	*
V 5	3V4	*	†1.4KΩ	†690Ω	1.5Meg	*	3.3Meg	*

ALL MEASUREMENTS TAKEN WITH M3 IN AC POSITION
† MEASURED FROM OUTPUT OF M1
* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

©Howard W. Sams & Co., Inc. 1951

151-12

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

*TRADE MARK

ZENITH MODELS H2229R, H2230E, R, H2241R, H2242E, R, H2252R, H2253E, H2254R, H3273E, H3274R, H3284R

IMPORTANT FILING NOTICE

The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

MODEL H3284R

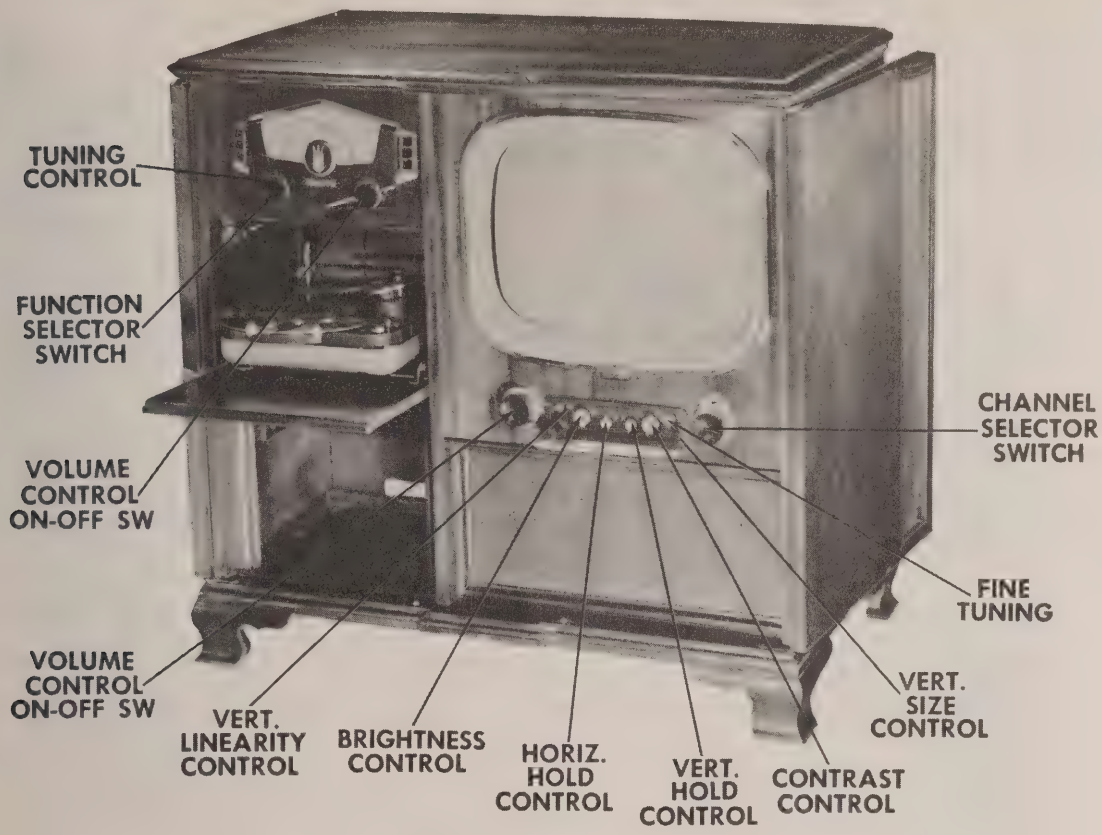
ZENITH MODELS H2229R, H2230E, R, H2241R, H2242E, R, H2252R, H2253E, H2254R, H3273E, H3274R, H3284R

HOWARD W. SAMS & CO., INC. • Indianapolis, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 11-51 SET 151 FOLDER 13

ZENITH MODELS H2229R, H2230E, R, H2241R, H2242E, R, H2252R, H2253E, H2254R, H3273E, H3274R, H3284R



ZENITH MODEL H3284R

TRADE NAME	Zenith	MODEL	TV CHASSIS	RADIO CHASSIS
		H2229R, H2230E, R, H2241R	22H21	None
		H2242E, R	22H22	None
		H2252R, H2253E	22H21	None
		H2254R	22H22	None
		H3273E, H3274R	22H21	10H20Z
		H3284R	22H22	10H20Z

MANUFACTURER	Zenith Radio Crop., 6001 Dickens Ave., Chicago, Illinois
TYPE SET	TV-AM-FM-Phono Combination Receiver (Some models TV "Only")
TUBES	Thirty two (Combination Receivers) Twenty two (TV "Only" Receivers)
POWER SUPPLY RATINGS	110-120 Volts AC - 60 Cycles (TV) 2.15 Amp. at 117 Volts AC (RADIO) .93 Amp. at 117 Volts AC
TUNING RANGES	(TV) Channels 2 thru 13 (FM)88-108MC (AM) 540-1620KC

INDEX

AGC Adjustment 6
Alignment Instructions 6, 7
Drive Cord Stringing 24
Disassembly Instructions 23
Horizontal Sweep Circuit Adjustments 23
Parts List and Description ..... 15 thru 20
Photographs
Cabinet - Rear View 23
Capacitor and Alignment Identification (TV) 4, 9
Capacitor and Alignment Identification (Radio) 13
Chassis - Top View (TV) 3
Photographs (Cont.)
Chassis - Top View (Radio) 10
RF Tuner 8
Resistor and Inductor Identification (TV) 12, 21
Resistor and Inductor Identification (Radio) 14
Resistance Measurements 8
Schematic (TV) 2
Schematic (Radio) 11, 22
Schematic (Remote Control Unit) 20
Tube Placement Charts 5

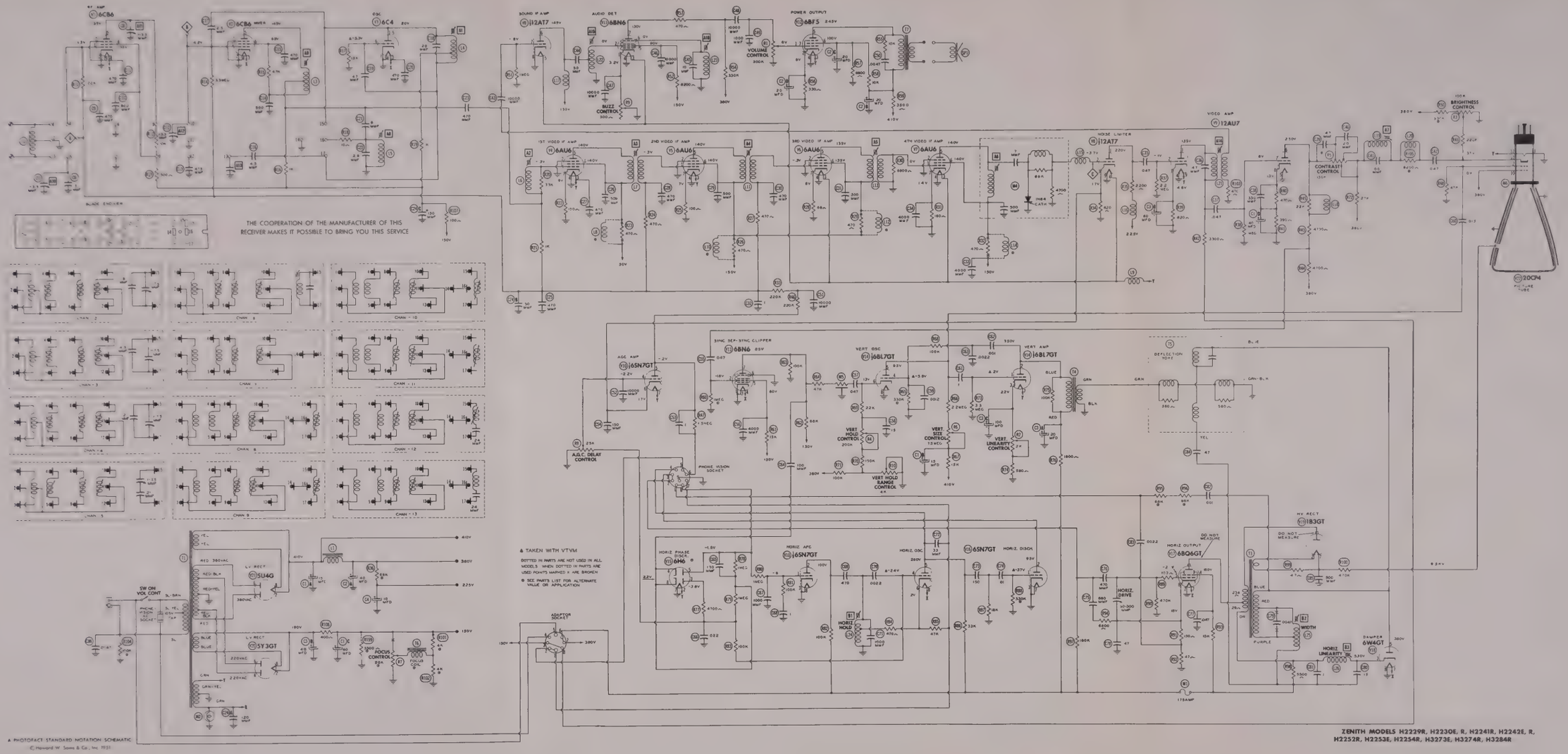
FOR SERVICE INFORMATION ON ZENITH RECORD CHANGER UNIT - SEE PHOTOFACT SET # 145 - FOLDER 13.

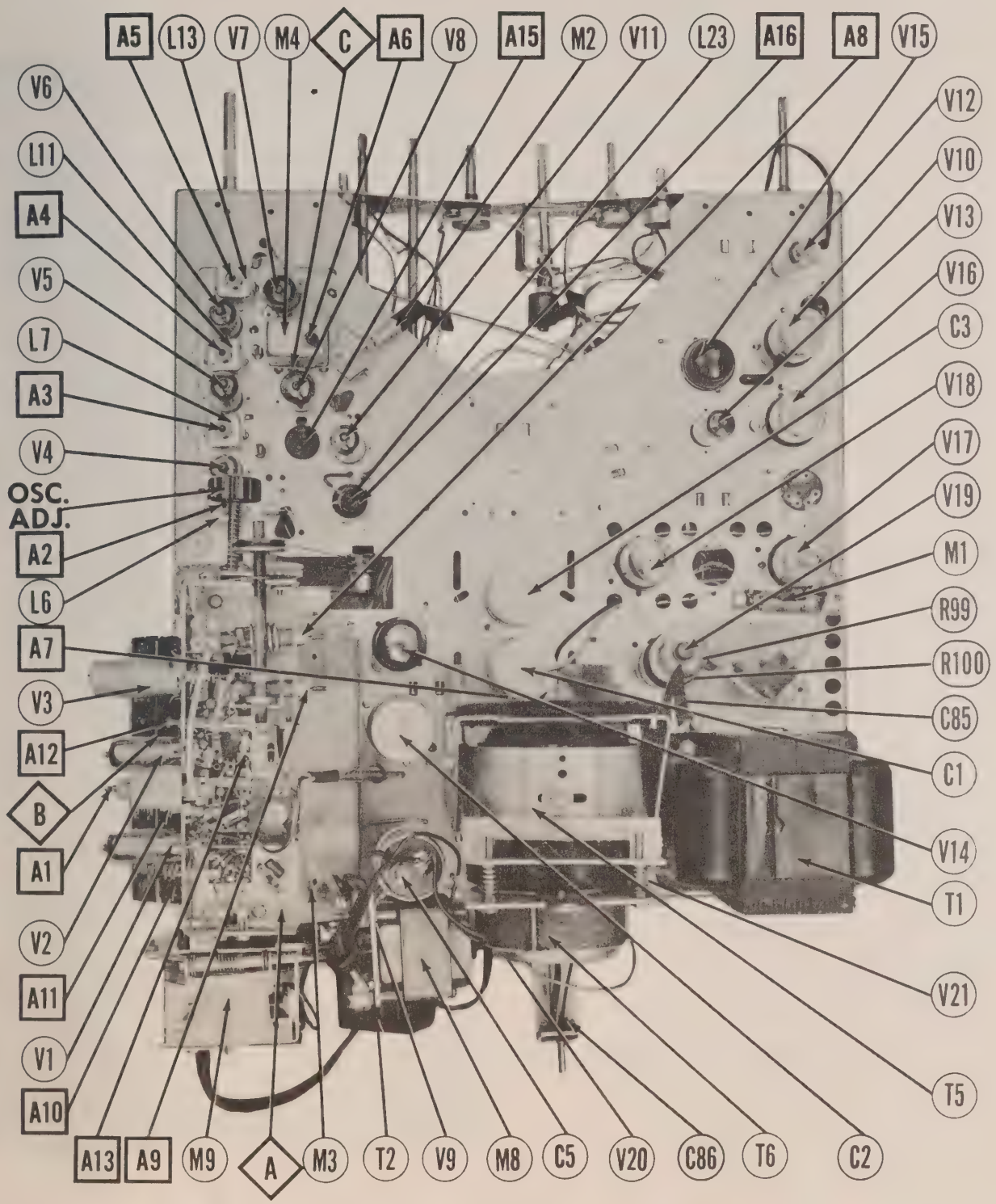
HOWARD W. SAMS & CO., INC. • Indianapolis 5, Indiana

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
"Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1951 by Howard W. Sams & Co., Inc., Indianapolis, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

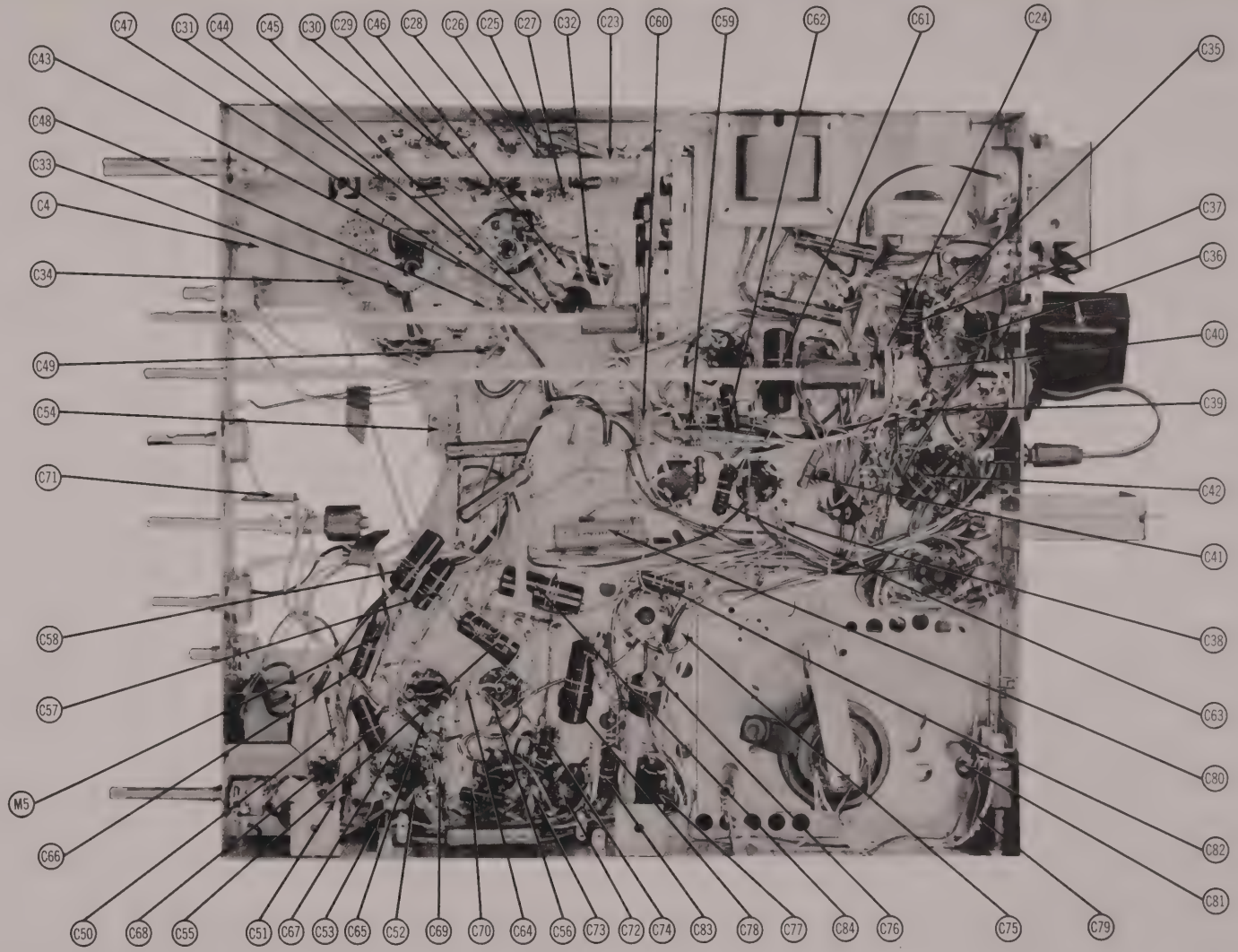
DATE 11-51 SET 151 FOLDER 13

ZENITH MODELS H2229R, H2230E, R, H2241R, H2242E, R, H2252R, H2253E, H2254R, H3273E, H3274R, H3284R

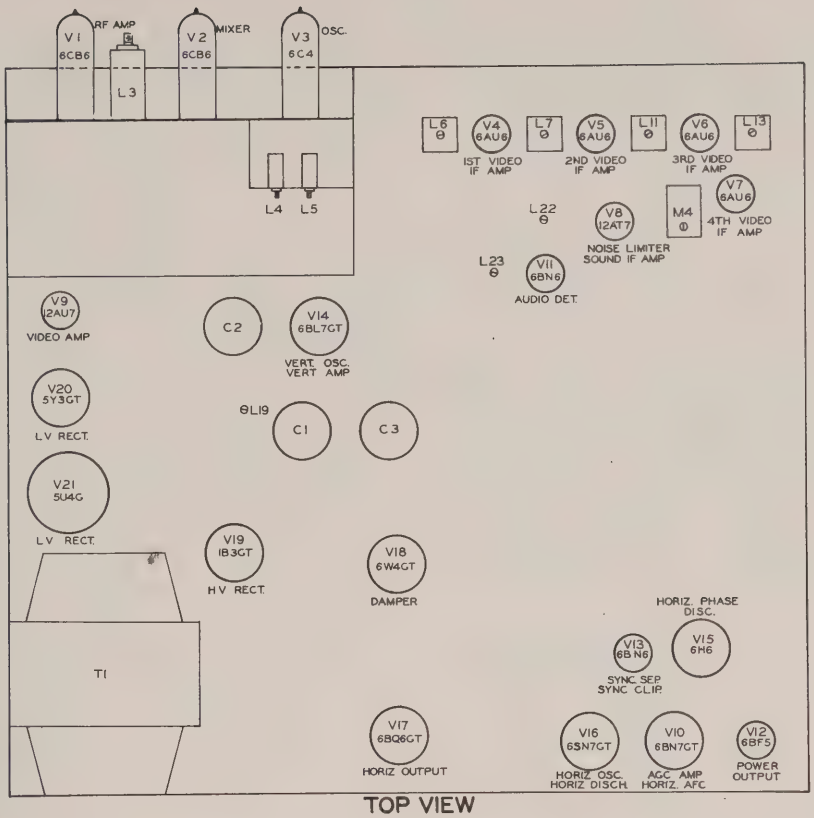

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
ZENITH MODELS H2229R, H2230E, R, H2241R, H2242E, R, H2252R, H2253E, H2254R, H3273E, H3274R, H3284R
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1951



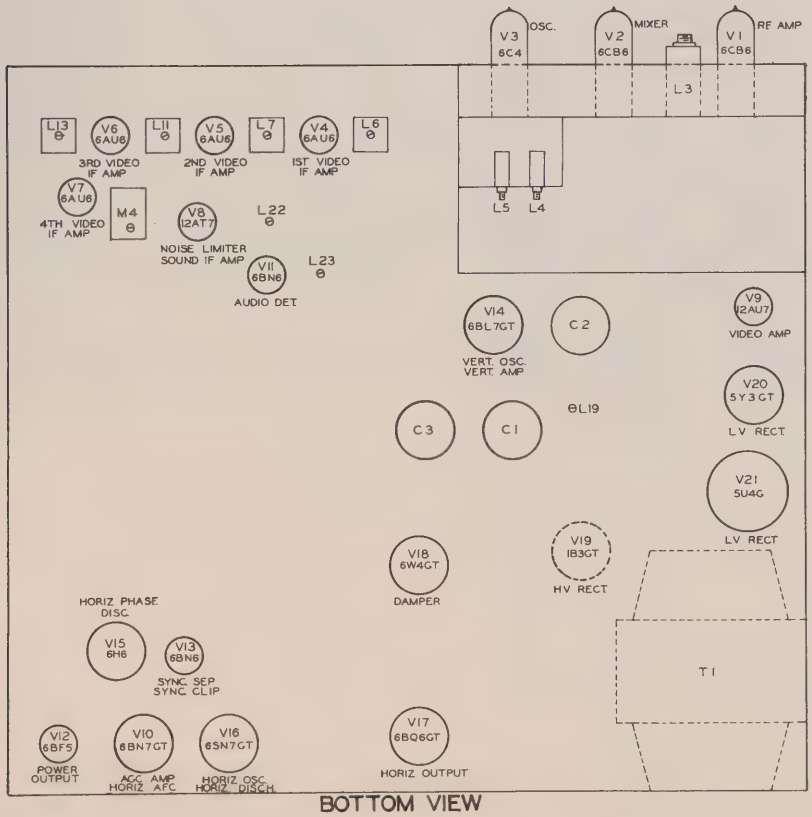
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION



TOP VIEW



BOTTOM VIEW

TUBE PLACEMENT CHART

TV ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator to disable the high voltage.

VIDEO IF ALIGNMENT

Remove the local oscillator tube, (V3), from its socket.
Connect the negative lead of a 4.5 volt battery to alignment Point A , connect the positive lead to chassis.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	470MMF.	High side to Point B . Low side to chassis.	44MC (10MC SWP)	42.75MC 43.5MC 45MC 45.75MC	12	Vert. Amp. thru 10KΩ to Point C. Low side to chassis.	A1, A2, A3, A4, A5, A6	Adjust for response curve similar to figure 1. The low frequency end of the response curve is adjusted by A1, A2 and A4. The high frequency end is adjusted by A3 and A5. The tilt of the top of the response is adjusted by A6. Attenuate sweep generator to maintain 3 volts peak to peak response on scope.
2.	"	"	"	47.25MC	2	"	A7	Adjust for MINIMUM marker indication at the 47.25MC point on response curve.
3.	.01MFD.	High side to Point C . Low side to chassis.	Not used	4.5MC (unmod.)	Any	USE VTVM DC probe thru detector (fig. 2) to pin 11 of picture tube. Common to chassis.	A8	Adjust for MINIMUM deflection.

OSCILLATOR ALIGNMENT

Replace the local oscillator tube in its socket.
Leave the 4.5 volt bias connected as during video IF alignment.
Turn the fine tuning control until the open spot on the drive pulley on the tuner shelf is pointing upward.
There is no channel strip adjustment for channel 7. The oscillator on channel 7 is adjusted by A9. If the oscillator strip adjustment proves inadequate on any channel, and it has been definitely established that the channel strip is not at fault, compromise adjustment of A9 may be made. If A9 is changed it will be necessary to readjust the channel strip adjustment for all channels. Do not adjust A9 so channel 7 is beyond the range of the fine tuning control.
The channel strip adjustments are made by pressing the oscillator adjust knob inward and turning the knob. Release the knob before switching channels.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	177MC (10MC SWP)	175.25MC 179.75MC	7	Vert. Amp. thru 10KΩ to Point C. Low side to chassis.	A9	Adjust to place video marker at 50% on response curve as shown in figure 3.
5.	"	"	213MC (10MC SWP)	211.25MC 215.75MC	13	"		Adjust the oscillator adjust knob, as explained above, on each channel to place the video marker at 50% on response curve as per figure 3.
			207MC (10MC SWP)	205.25MC 209.75MC	12			
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			85MC (10MC SWP)	83.25MC 87.75MC	6			
			79MC (10MC SWP)	77.25MC 81.75MC	5			
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

RF ALIGNMENT

Leave the bias connected.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Remove the bias battery after completing RF alignment.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Two 120Ω carbon resistors	Across antenna terminals with 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. Amp. thru 10KΩ to Point C. Low side to chassis.	A10, A11, A12, A13	Adjust for maximum amplitude with proper band width as shown in figure 3.
7.	"	"	207MC (10MC SWP)	205.25MC 209.75MC	12	"		Check all channels for response similar to figure 3. If the response is tilted a similar amount on all channels recheck video IF alignment. If the sensitivity seems to be low on the high band channels adjust A13 for best response over the high band channels.
			201MC (10MC SWP)	199.25MC 203.75MC	11			
			195MC (10MC SWP)	193.25MC 197.75MC	10			
			189MC (10MC SWP)	187.25MC 191.75MC	9			
			183MC (10MC SWP)	181.25MC 185.75MC	8			
			177MC (10MC SWP)	175.25MC 179.75MC	7			
			85MC (10MC SWP)	83.25MC 87.75MC	6			
			79MC (10MC SWP)	77.25MC 81.75MC	5			
			69MC (10MC SWP)	67.25MC 71.75MC	4			
			63MC (10MC SWP)	61.25MC 65.75MC	3			
			57MC (10MC SWP)	55.25MC 59.75MC	2			

AGC FIELD ADJUSTMENT

Tune in a TV station and turn the contrast control to maximum clockwise.
Adjust the AGC control until the picture is below the point of overloading and the contrast is slightly above normal.

AGC SHOP ADJUSTMENT

Connect a 10KΩ resistor in series with the oscilloscope vertical input.
Connect an antenna and tune in a local TV station.
Connect the oscilloscope to Point C , low side to chassis, and adjust the AGC control for 2 volt peak to peak signal on the scope.

SOUND IF ALIGNMENT

The sound IF portion of this receiver can best be aligned by using a TV station signal and attenuater (Zenith Part # S17203 or equivalent).
The attenuater should be connected between the antenna and the receiver and adjusted so the signal strength is reduced below the limiting level of the sound limiter-detector. This point will be indicated by a hiss similar to super-regeneration.
Adjust A14, A15, and A16 for maximum audio of best quality.
Adjust the "buzz" control (R9) for minimum buzz in the audio.
If the hiss disappears during any of the above adjustments, reduce the signal with the attenuater until the hiss returns. If the buzz cannot be completely eliminated, recheck the AGC adjustment.

RADIO ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer turn tuning gang fully closed and set pointer to the dot at the low frequency end of the AM dial scale.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
8.	.05MFD.	High side to pin 2, (Grid), of 12AT7 (V24). Low side to chassis.	455KC (400% Mod.)	AM (Center)	600KC	Across voice coil	A17, A18 A19, A20 A21, A22	Adjust for maximum output.
9.		Loop	1600KC	"	1600KC	"	A23	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
10		Loop	1400KC	"	Tune for max. output.	"	A24, A25	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect a 2 megohm decoupling resistor in series with the VTVM DC probe.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
11.	.05MFD.	High side to pin 1, (Grid), of 6AU6, (V27). Low side to chassis.	10.7MC	FM (CW)	Tuning gang fully closed.	DC probe thru 2Meg. to Point (D). Common to chassis.	A26	Adjust for maximum deflection.
12.	"	"	"	"	"	DC probe thru 2Meg. to Point (E). Common to chassis.	A27	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
13.	"	High side to pin 1, (Grid), of 6BA6, (V25). Low side to chassis.	"	"	"	DC probe thru 2Meg. to Point (F). Common to chassis.	A28, A29 A30, A31	Adjust for maximum deflection.
14.	"	High side to pin 2, (Grid), of 12AT7, (V24). Low side to chassis.	"	"	"	"	A32, A33	"

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
11.	.05MFD.	High side to pin 1, (Grid), of 6AU6, (V27). Low side to chassis.	10.7MC (450KC SWP)	FM (CW)	Point of non-interference.	Vert. Amp. thru 47KΩ to Point (D). Low side to chassis.	A26	Adjust for maximum amplitude and symmetry as per figure 4.
12.	"	"	"	"	"	Vert. Amp. thru 47KΩ to Point (E). Low side to chassis.	A27	Adjust A27 so 10.7MC occurs at center of crossover lines as per figure 5. Retouch A26 for maximum amplitude and straightness of crossover lines.
13.	"	High side to pin 1, (Grid), of 6BA6, (V25). Low side to chassis.	"	"	"	Vert. Amp. thru 47KΩ to Point (F). Low side to chassis.	A28, A29 A30, A31	Adjust for maximum amplitude and symmetry as per figure 4.
14.	"	High side to pin 2, (Grid), of 12AT7, (V24). Low side to chassis.	"	"	"	"	A32, A33	"

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	270Ω carbon resistor	High side thru 270Ω to FM ant. terminal. Low side to chassis.	98MC (unmod.)	FM	98MC	DC probe thru 2Meg to Point (F). Common to chassis.	A34, A35	Adjust for maximum deflection.

PHONO OSCILLATOR ADJUSTMENT

If the receiver oscillates on phono position adjust the phono osc. trimmer (B4) until the oscillation ceases.
The point of no oscillation may vary with different phono pickups, therefore it may be necessary to adjust B4 if the pickup is changed.

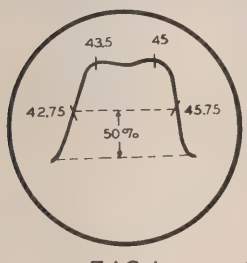


FIG.1

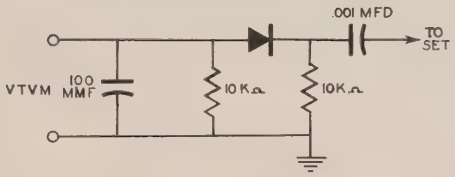


FIG.2

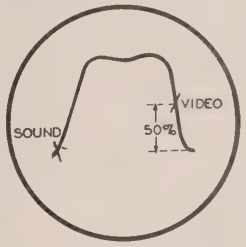


FIG.3

FIG.4

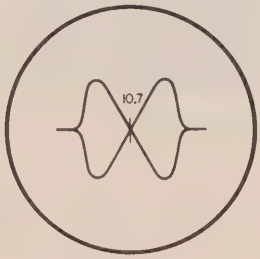


FIG. 5

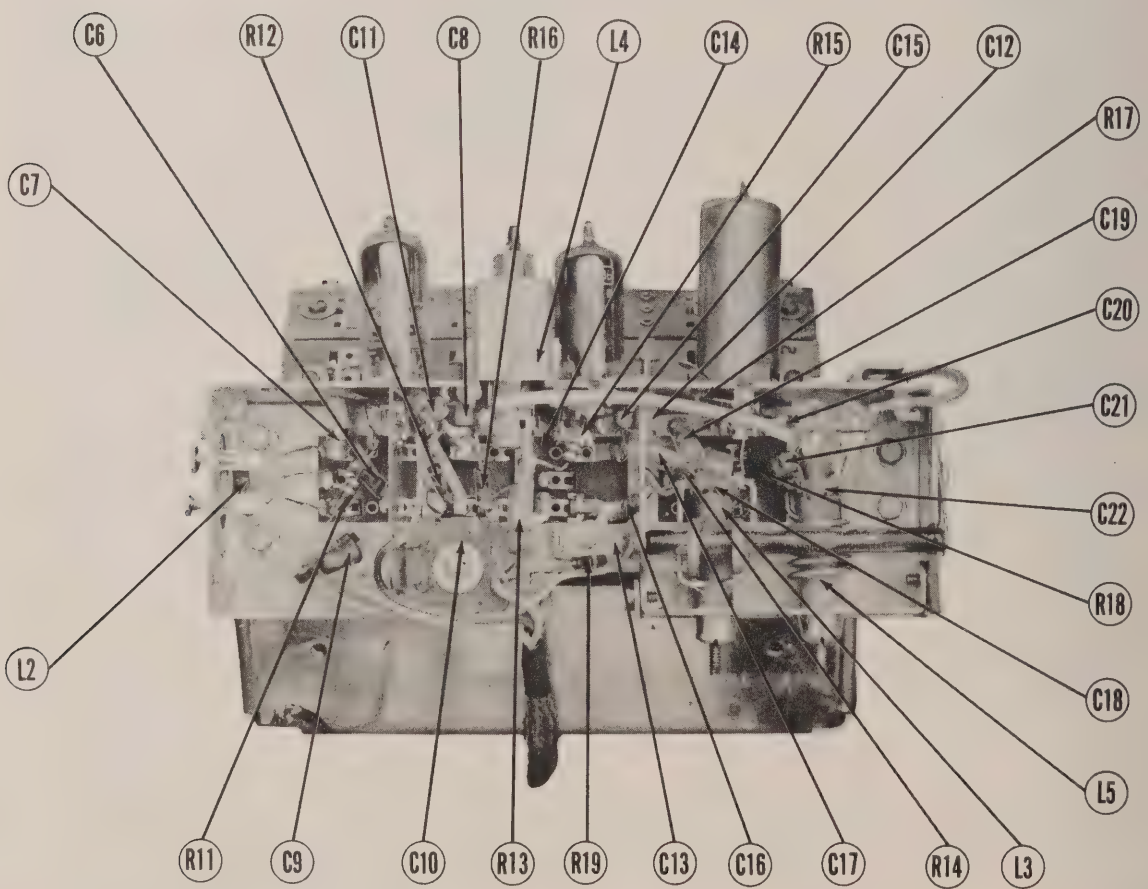
ZENITH MODELS H2229R, H2230E, R, H2241R, H2242E, R, H2252R, H2253E, H2254R, H3273E, H3274R, H3284R

RESISTANCE MEASUREMENTS

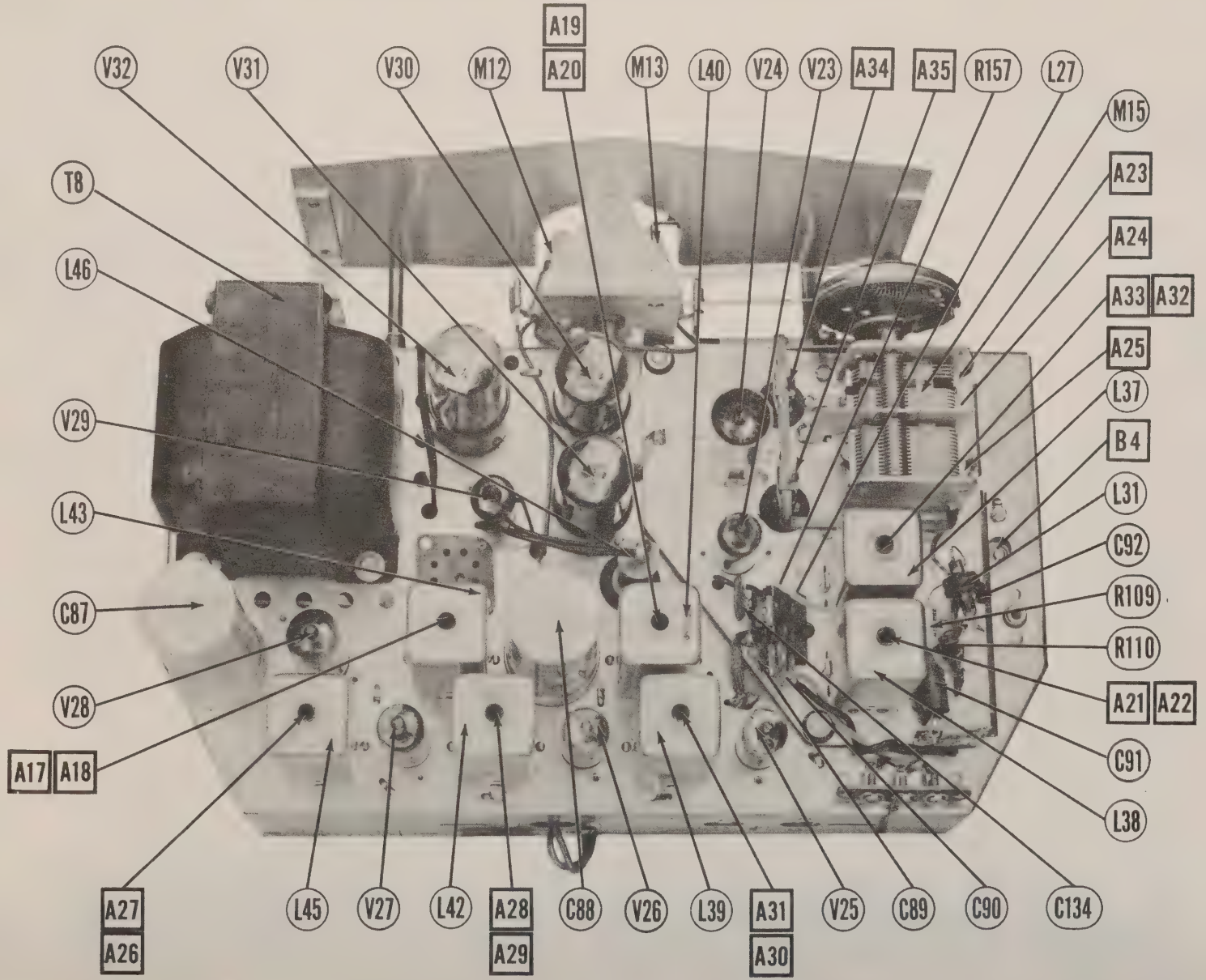
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6CB6	1.7Meg	0Ω	0Ω	.1Ω	†2KΩ	†2KΩ	0Ω		
V 2	6CB6	5Meg	0Ω	.1Ω	0Ω	†1.5KΩ	†48KΩ	0Ω		
V 3	6C4	†1.5KΩ	Inf.	.1Ω	0Ω	†1.5KΩ	15KΩ	0Ω		
V 4	6AU6	1.7Meg	0Ω	.1Ω	0Ω	†870Ω	†870Ω	150Ω		
V 5	6AU6	1.7Meg	0Ω	.1Ω	0Ω	†870Ω	†870Ω	100Ω		
V 6	6AU6	1.7Meg	0Ω	.1Ω	0Ω	†1.3KΩ	†1.3KΩ	68Ω		
V 7	6AU6	.1Ω	0Ω	.1Ω	0Ω	†870Ω	†870Ω	180Ω		
V 8	12AT7	▲70KΩ	4.7KΩ	820Ω	.1Ω	.1Ω	†400Ω	1Meg	0Ω	0Ω
V 9	12AU7	†3.7KΩ	2.2Meg	820Ω	0Ω	0Ω	▲9.4KΩ	1Meg	860Ω	.1Ω
V 10	6SN7GT	3Meg	▲100KΩ	0Ω	1KΩ	1.5Meg	820Ω	.1Ω	0Ω	
V 11	6BN6	380Ω	5.5Ω	.1Ω	0Ω	†8.6KΩ	4.5Ω	▲330KΩ		
V 12	6BE5	17Ω	330Ω	.1Ω	0Ω	▲3.5KΩ	▲13KΩ	17Ω		
V 13	6BN6	0Ω	1Meg	0Ω	.1Ω	†15KΩ	0Ω	†68KΩ		
V 14	6BL7GT	3.3Meg	▲2.4KΩ	1.4KΩ	330KΩ	▲7Meg	240KΩ	.1Ω	0Ω	
V 15	6H6	0Ω	0Ω	29KΩ	1Meg	2Meg	Inf.	.1Ω	1Meg	
V 16	6SN7GT	330KΩ	▲180KΩ	0Ω	125KΩ	▲33KΩ	470Ω	0Ω	.1Ω	
V 17	6BQ6GT	Inf.	0Ω	470Ω	▲15KΩ	470KΩ	▲15KΩ	.1Ω	195Ω	Top Cap #40Ω
V 18	6W4GT	2Meg	▲200Ω	▲5.6KΩ	6.8KΩ	▲200Ω	250KΩ	.1Ω	0Ω	
V 19	1B3GT	PINS 1-8 HAVE INF. RESISTANCE								Top Cap #275Ω
V 20	5Y3GT	.1Ω	5.5KΩ	.1Ω	14Ω	Inf.	13Ω	Inf.	5.5KΩ	
V 21	5U4G	Inf.	15KΩ	.1Ω	23Ω	160KΩ	24Ω	▲170Ω	15KΩ	
V 22	20CP4	0Ω	47KΩ	PIN 10 ▲180Ω	PIN 11 ▲280KΩ	PIN 12 .1Ω				

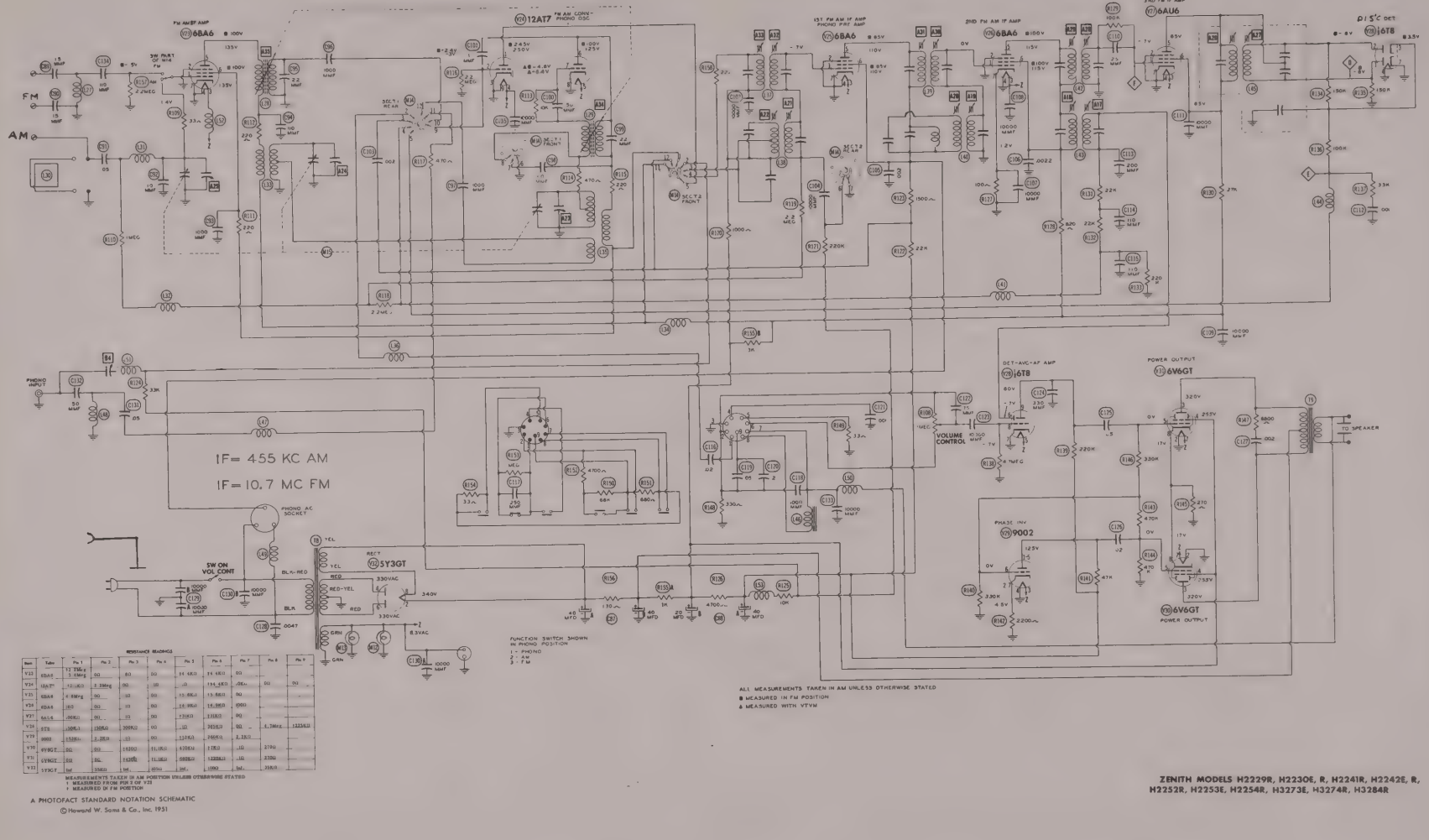
† MEASURED FROM PIN 2 OF V20
▲ MEASURED FROM PIN 2 OF V21
MEASURED FROM PIN 3 OF V18



RF TUNER



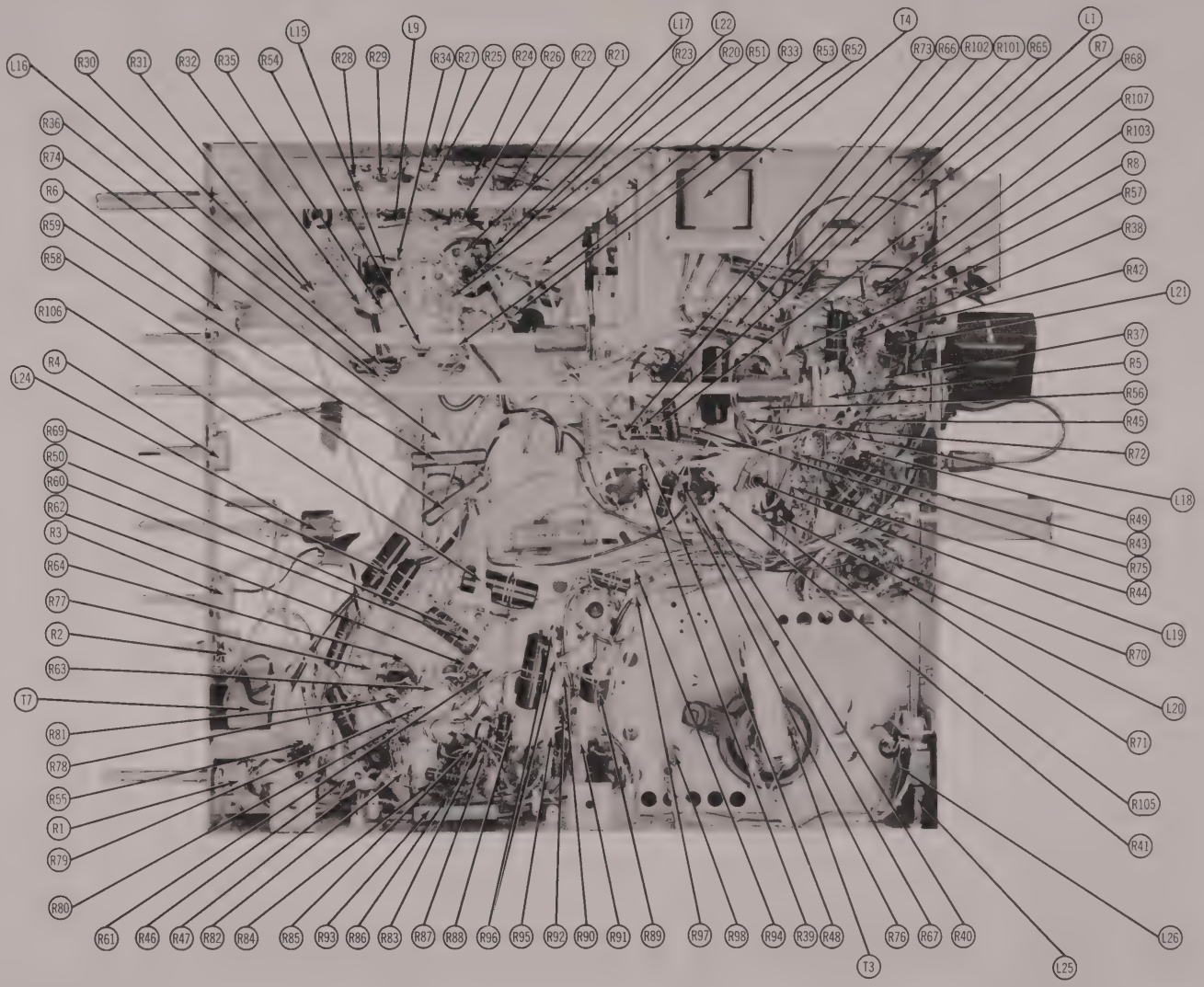
RADIO CHASSIS-TOP VIEW


1F= 455 KC AM
1F= 10.7 MC FM
FUNCTION SWITCH SHOWN IN PHONO POSITION
1 - PHONO
2 - AM
3 - FM
ALL MEASUREMENTS TAKEN IN AM UNLESS OTHERWISE STATED
B MEASURED IN FM POSITION
A MEASURED WITH VTVM
ZENITH MODELS H2229R, H2230E, R, H2241R, H2242E, R,
H2252R, H2253E, H2254R, H3273E, H3274R, H3284R

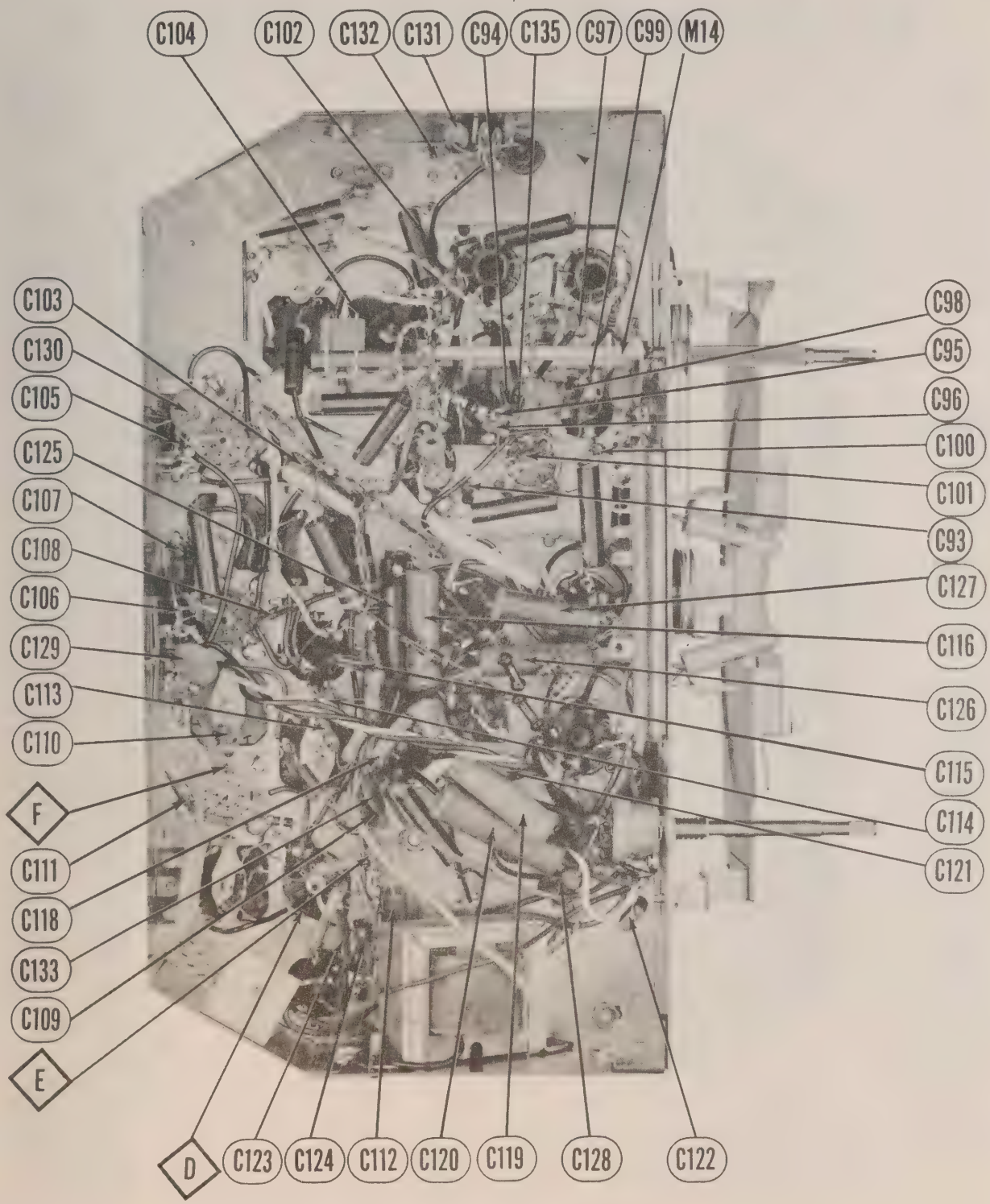
RADIO SCHEMATIC - CH. 10H20Z

A PHOTOFACT STANDARD NOTATION SCHEMATIC

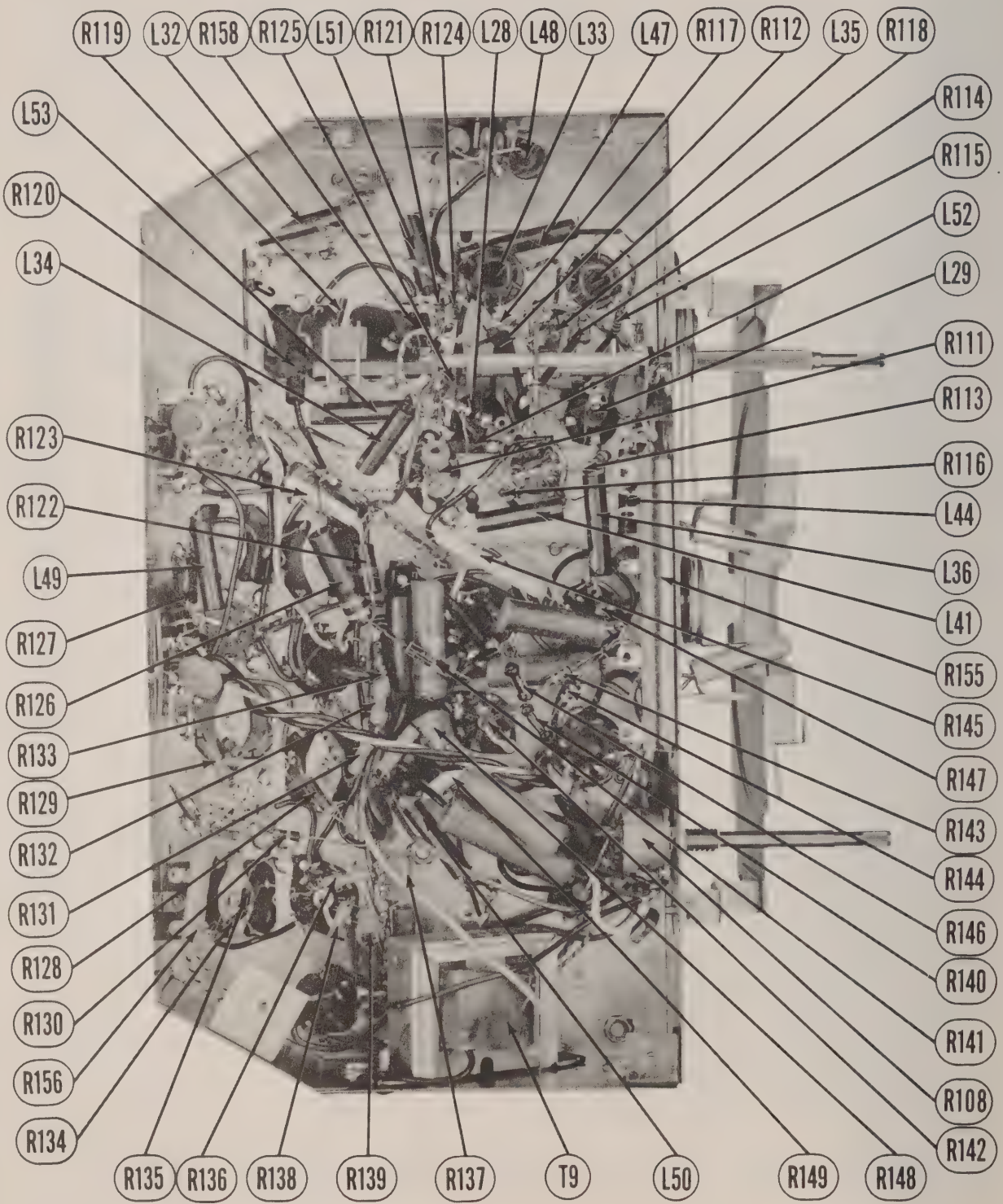
© Howard W. Sams & Co., Inc. 1951



CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION



RADIO CHASSIS-BOTTOM VIEW-CAPACITOR IDENTIFICATION



RADIO CHASSIS - BOTTOM VIEW - RESISTOR IDENTIFICATION

TV PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		ZENITH PART No.	STANDARD REPLACEMENT		
V1	RF Amplifier	6CB6	6CB6	7CM	
V2	Mixer	6CB6	6CB6	7CM	
V3	Oscillator	6C4	6C4	6BG	
V4	1st. Video IF Amp.	6AU6	6AU6	7BK	
V5	2nd. Video IF Amp.	6AU6	6AU6	7BK	
V6	3rd. Video IF Amp.	6AU6	6AU6	7BK	
V7	4th. Video IF Amp.	6AU6	6AU6	7BK	
V8	Noise Limiter-Sound IF Amp.	12AT7	12AT7	9A	
V9	Video Amplifier	12AU7	12AU7	9A	
V10	AGC Amplifier-Horiz. AFC	6SN7GT	6SN7GT	8BD	
V11	Audio Detector	6BN6	6BN6	7DF	
V12	Power Output	6BF5	6BF5	7BZ	
V13	Sync. Separator-Sync. Clipper	6BN6	6BN6	7DF	
V14	Vert. Oscillator-Vert. Amplifier	6BL7GT	6BL7GT	8BD	
V15A	Horizontal Phase Discriminator	6AL5	6AL5	6BT	
B	Horiz. Phase Discriminator	6H6	6H6	7Q	
V16	Horiz. Oscillator Horiz. Discharge	6SN7GT	6SN7GT	8BD	
V17	Horiz. Output	6BQ6GT	6BQ6GT	6AM	
V18	Damper	6W4GT	6W4GT	4CG	
V19	HV Rectifier	1B3GT	1B3GT	3C	
V20	LV Rectifier	5Y3GT	5Y3GT	5T	
V21	LV Rectifier	5U4G	5U4G	5T	

CATHODE-RAY TUBE

ITEM No.	REPLACEMENT DATA			RTMA BASE TYPE	NOTES
	ZENITH PART No.	SYLVANIA PART No.	THOMAS PART No.		
V22A	20CP4	20CP4	20CP4	12D	} Ch. 22H22
B	20DP4	20DP4		12D	
C	17BP4	17BP4	17BP4	12D	Ch. 22H21

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	15	475	22-2122	AFH4-113		UPT417		TVL-4815	▲ Filter
B	15	475							■ Vert. Osc. Dec.
C	80	300							▲ Filter
D	40	50							Video Amp. Cathode
C2A	40	450	22-2224	AFH4-76		UPT42245C		TVL-4732	▲ Filter
B	20	450							■ Filter
C	20	200							▲ Audio Output Screen
D	20	25							Audio Output Cathode
C3A	20	475	22-2223	AFH4-119		UPT422		TVL-4800	▲ Vert. Amp. Dec.
B	40	300							■ Filter
C	100	50							▲ Vert. Amp. Cathode
D	80	25							Video Amp. Cathode
C4	10	250	22-2154	PRS250/12		BR1225A		TVA-1504	Noise Limiter Plate
C5	130	40	22-2252	E47A225		ETB175-5			Remote Control Motor Filter
C6	5		22-2050	SI5NP0	TCZ-4.7		NP0K-050		Fixed Padder
C7	1-3.5		22-2093		829-4				Variable Trimmer
C8	1-3.5		22-2093		829-4				Variable Trimmer
C9	470		22-2219	SI470	D6-471		GP2K-471	5GA-T47	AGC Filter
C10	600		27-82		D6-601				RF Amp. Screen
C11	470		22-2219	SI470	D6-471		GP2K-471	5GA-T47	RF Amp. Fil.
C12	1-3.5		22-2093		829-4				Variable Trimmer
C13	475		27-69						Fixed Padder
C14	500		22-2216	SI500	D6-501		GP2K-501	5GA-T5	Mixer Plate Dec.
C15	470		22-2219	SI470	D6-471		GP2K-471	5GA-T47	Mixer Screen
C16	4.5		22-2207				N750K-4R5		Osc. Feedback
C17	2.5		22-1891				N030K-2R5		Osc. Coupling
C18	20		22-2204				N080-331-200		Fixed Trimmer
C19	47		22-1876	SI47N080			N080-338-470		Osc. Grid Cap.
C20	470		22-2219	SI470	D6-471		GP2K-471	5GA-T47	Osc. Fil.
C21	6		22-2051				NP0K-060		IF Coupling
C22	26		22-2155				N080-331-260		Fixed Trimmer
C23	470	500	22-1138	1468-0005	D6-471	5W5T5	GP2K-471	5GA-T47	IFCoupling
C24A	120		}	SI120	D6-121		GP2K-121	5GA-T12	Fil. Bypass
B	150		27-160	SI150	D6-151	5W5T15	GP2K-151	5GA-T15	AGC Filter
C	150		}	SI150	D6-151	5W5T15	GP2K-151	5GA-T15	RF Bypass
C25	470		22-2143	SI470	D6-471	5W5T5	GP2K-471	5GA-T47	AGC Filter
C26	500		22-2216	SI500	D6-501	5W5T5	GP2K-501	5GA-T5	1st. Video IF Dec.
C27	470		22-2143	SI470	D6-471	5W5T5	GP2K-471	5GA-T47	1st. Video IF Fil.
C28	470		22-2143	SI470	D6-471	5W5T5	GP2K-471	5GA-T47	AGC Filter
C29	500		22-2216	SI500	D6-501	5W5T5	GP2K-501	5GA-T5	2nd. Video IF Dec.
C30	470		22-2143	SI470	D6-471	5W5T5	GP2K-471	5GA-T47	AGC Filter
C31	500		22-2216	SI500	D6-501	5W5T5	GP2K-501	5GA-T5	3rd. Video IF Dec.
C32	.1	200	22-1777	P288-1	DF-104	PTE4P1		2TM-P1	AGC Filter
C33	4000		22-4	BPD-004	D6-402	1D5D4	GP2-333-402		RF Bypass
C34	4000		22-4	BPD-004	D6-402	1D5D4	GP2-333-402		4th. Video IF Cathode
C35	.047	600	22-2078	P688-047	DF-503	PTE6S5		6TM-S47	Video Coupling
C36	47		22-1876		TCZ-47		NP0L-470	5TCC-Q47	Fixed Trimmer
C37	.047	600	22-2078	P688-047	DF-503	PTE6S5		6TM-S47	Video Coupling
C38	330	500	22-1645	1469-00035	D6-331		GP2K-331	5GA-T33	Video Amp. Cathode
C39	47			SI47	D6-470	5W5Q5	GP1K-470	5GA-Q47	Video Coupling †
C40	20		22-2233	SI20		5W5Q2	GP1K-200		Contrast Cont. Shunt
C41	100		22-2234				N330K-101		Fixed Trimmer
C42	.047	600	22-2078	P688-047	DF-503	PTE6S5		6TM-S47	Video Coupling
C43	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Sound IF Coupling
C44	50		22-1761	SI50	D6-500	5W5Q5	GP1K-500	5GA-Q5	Sound IF Coupling
C45	10		22-2106				N330K-100		Fixed Trimmer

TV PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No	RATING CAP	RATING VOLT	ZENITH PART No	AEROVOX PART No	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No	IDENTIFICATION CODES AND INSTALLATION NOTES
C46	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Audio Det. Grid
C47	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Audio Det. Cathode
C48	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Audio Coupling
C49	1000		22-3218	S1000	D6-102	1W5D1	GP2L-102	5HK-D1	Tone Comp.
C50	.0047	600	22-1849	P688-0047	D6-472	PTE5D5	GP2-333-472	6TM-D47	Audio Output Plate
C51	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	AGC Filter
C52	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	RF Bypass
C53	.1	300	22-1777	P288-1	DF-104	PTE4P1		2TM-P1	Horiz. Feedback
C54	150	500	22-1127	1468-00015	D6-151	5W5T15	GP2K-151	1FM-315	AGC Amp. Cathode
C55	.047	600	22-2078	P688-047	DF-503	PTE5B5		6TM-S47	Sync. Coupling
C56	4000		22-4	BPD-004	D6-402	LD5D4	GP2-333-403		Sync. Clipper Screen
C57	.047	400	22-1775	P688-047	DF-503	PTE4S5		4TM-S47	Vert. Sync. Coupling
C58	.15	300	22-2281	P288-15				2TM-P15	Vert. Osc. Cathode
C59	.0012	600	22-1680		D6-122		GP2L-122		Vert. Osc. Grid
C60	.015	600	22-2264	P688-015		PTE6S15		6TM-S15	Vert. Feedback
C61	.1	600	22-1841	P688-1	DF-104	PTE6P1		6TM-P1	Vert. Sweep Coupling
C62	.001	600	22-3138	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Vert. Feedback
C63	.0022	600	22-1845	P688-0022	D6-222	PTE6D2	GP2-333-222	6TM-D22	Voltage Divider
C64	100	500	22-385	1468-00015	D6-101	5W5T1	GP1K-101	1FM-31	Horiz. Sync. Coupling
C65	130	500	22-2162	1468-00015		5W5T15		1FM-315	AFC Filter
C66	.022	300	22-2071	P488-022		PTE4S2		4TM-S22	AFC Filter
C67	1000		22-3218	S1000	D6-102	1W5D1	GP2L-102	5HK-D1	AFC Filter
C68	.1	300	22-1777	P288-1	DF-104	PTE4P1		2TM-P1	AFC Filter
C69	470	500	22-1138	1468-0005	D6-471	5W5T5	GP2K-471	1FM-35	Horiz. Sync. Coupling
C70	.0068	600	22-1845	P688-0022	D6-222	PTE6D2	GP2-333-222	6TM-D22	Horiz. Osc. Grid
C71	1000	500	22-3163	1464-001		1R5D1		MS-21	Fixed Trimmer
C72	33		22-3168	S133	D6-330		GP1K-330	5GA-Q33	Horiz. Sweep Coupling
C73	150	500	22-1670	1468-00015	D6-151	5W5T15	GP2K-151	1FM-315	Differentiating Net.
C74	.01	400	22-1846	P488-01	D6-103	PTE4S1	GP2-333-103	4TM-S1	Horiz. Sweep Coupling
C75	680	500	22-2034	1478-0007		2R5T7		MS-37	Horiz. Discharge
C76	500	500	22-1132	1468-0005	D6-471	5W5T5	GP2K-471	1FM-35	Horiz. Sweep Coupling
C77	.047	600	22-2078	P668-047	DF-503	PTE5S5		6TM-S47	Horiz. Output Screen
C78	.47	200	22-3146	P288-47		GT2P5		2TM-P47	Horiz. Output Cathode
C79	.0047	600	22-1849	P488-0047	D6-472	PTE4D5	GP2-333-472	6TM-D47	Fixed Trimmer
C80	.15	400	22-2281	P488-15				4TM-P15	Damper Filter
C81	.1	400	22-2081	P488-1	DF-104	PTE4P1		4TM-P1	Damper Filter
C82	.001	600	22-2128	P668-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Horiz. Feedback
C83	.0022	600	22-1845	P488-0022	D6-222	PTE6D2	GP2-333-222	6TM-D22	Horiz. Feedback
C84	47	200	22-2145	P288-47		GT2P5		2TM-P47	Horiz. Sweep Coupling
C85	500	20000	22-1832	HV20-C	TV3-502				HV Filter
C86	.0047	600	22-1849	P668-0047	D6-472	PTE8D5	GP2-333-472	6TM-D47	Line Filter

† Some models use 20MMF. in this application. (Part # 22-2233)

CONTROLS

ITEM No	RATING RESISTANCE	RATING WATTS	ZENITH PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	63-2125	Q13-133	AG-60-Z	AN-60	Volume Control
B	Shaft		Not req.	Not req. .	KSS-3	AK-4	Attach to R1A per instructions
C	Switch		Not req.	76-1	SWB	K-155	Attach to R1A per instructions
R2A	2000Ω	½	63-1674	Q11-110	AG-11-S	AN-6	Vertical Linearity Control
B	Shaft		Not req.	SQ	FKS-1/4	AK-1	Attach to R2A per instructions
R3A	200KΩ	½	63-2128	Q11-128	AG-49-S	SB-220	Brightness Control
B	Shaft		Not req.	Not req.	KSS-3	Not req.	Attach to R3A per instructions
R5	150KΩ	½	63-2123			SBT-217	Contrast Control
R6	7.5Meg	½	63-2119			SB-204	Vertical Size Control
R7	20KΩ	4	63-2099		RTV-185		Focus Control - Wire Wound *
R8A	25KΩ	½	63-2153	Q11-120	AG-40-S	AN-26	AGC Delay Control
B	Shaft		Not req.	RQ	FKS-1/4	AK-1	Attach to R8A per instructions
R9	500Ω	1	63-2050		AG-42-S		Buzz Control - Wire Wound
R10	4000Ω	1	63-2159				Vertical Hold Range Control - Wire Wound

* Not used in all models.

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	ZENITH PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE SPECIFIED
R11	100KΩ	½	63-1869		RF Amp. Grid
R12	10KΩ	½	63-1827		RF Amp. Plate
R13	1500Ω	½	63-1967	BTA-1500	RF Amp. Decoupling
R14	3.3Meg 20%	½	63-1933		Mixer Grid
R15	47KΩ	½	63-1855	BTS-47K	Mixer Screen
R16	1000Ω	½	63-1785	BTS-1000	Voltage Divider
R17	150KΩ 20%	½	63-1835		Osc. Grid
R18	10Ω 20%	½	63-1702		RF Trap Coil Shunt
R19	1000Ω	½	63-1785	BTS-1000	Osc. Plate
R20	33KΩ	½	63-867	BTS-33K	1st. Video IF Transformer Shunt
R21	1000Ω	½	63-1785	BTS-1000	AGC Network
R22	150Ω	½	63-1751	BTS-150	1st. Video IF Amp. Cathode
R23	470Ω	½	63-1771	BTS-470	1st. Video IF Amp. Decoupling
R24	470Ω	½	63-1771	BTS-470	AGC Network
R25	100Ω	½	63-1744	BTS-100	2nd. Video IF Amp. Cathode
R26	470Ω	½	63-1771	BTS-470	Decoupling
R27	470Ω	½	63-1771	BTS-470	AGC Network
R28	68Ω	½			3rd. Video IF Amp. Cathode
R29	470Ω	½	63-1771	BTS-470	3rd. Video IF Amp. Decoupling
R30	6800Ω	½	63-1571	BTS-6800	4th. Video IF Transformer Shunt
R31	180Ω	½	63-1754	BTS-180	4th. Video IF Amp. Cathode
R32	470Ω	½	63-1771	BTS-470	4th. Video IF Amp. Decoupling
R33	220KΩ	½	63-1884	BTS-220K	AGC Network
R34	820Ω	½	63-1782	BTS-820	Noise Limiter Cathode
R35	2200Ω	½	63-1799	BTS-2200	Noise Limiter Plate
R36	68KΩ	½	63-1863	BTS-68K	Noise Limiter Plate - See Note 3
R37	2.2Meg 20%	½	63-1926	BTS-2.2Meg	Video Amp. Grid
R38	1Meg 20%	½	63-1913	BTS-1Meg	Video Amp. Grid
R39	820Ω	½	63-1782	BTS-820	Video Amp. Cathode
R40	470Ω	½	63-1771	BTS-470	Video Amp. Cathode
R41	390Ω	½	63-1768	BTS-390	Video Amp. Cathode
R42	3300Ω	½	63-1806	BTS-3300	Video Amp. Plate
R43	4700Ω	½	63-943	BTA-4700	Video Amp. Plate

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	ZENITH PART No.	IRC PART No.	IDENTIFICATION CODES
R44	4700Ω	½	63-943	BTA-4700	Video Amp. Plate
R45	22KΩ	½	63-1841	BTS 22K	Peaking Coil Shunt
R46	220KΩ	½	63-1883	BTS 220K	AGC Network
R47	1.5Meg	½	63-1919	BTS 1.5Meg	AGC Network
R48	47KΩ	½	63-1855	BTS-47K	Picture Tube Grid
R49	220KΩ	½	63-1883	BTS-220K	Picture Tube Cathode
R50	330KΩ	½	63-1890	BTS-330K	Voltage Divider - See Note 3
R51	1MegΩ	½	63-1911		Sound IF Amp. Grid
R52	8200Ω	2	63-1104	BTB-8200	Audio Detector Screen
R53	470Ω	½	63-1771		Parasitic Suppressor
R54	330KΩ	½	63-1890	BTS-330K	Audio Detector Plate
R55	10KΩ 20%	½		BTS-10K	Tone Compensation
R56	330Ω	½	63-1764	BTS-330	Output Cathode
R57	6800Ω	½	63-1571	BTB-6800	Voltage Divider
R58	10KΩ	5	63-2022	1 3/4A-10K	Filter - Wire Wound
R59	3500Ω	10	63-2023	1 3/4A-3500	Filter - Wire Wound
R60	1MegΩ	½	63-1911	BTS-1Meg	Sync. Clipper Gird - See Note 3
R61	15KΩ	½	63-1085	BTA-15K	Sync. Clipper Screen
R62	68KΩ	½	63-1862	BTS-68K	Sync. Clipper Plate
R63	100KΩ	½	63-1869	BTS-100K	Voltage Divider
R64	47KΩ	½	63-1855	BTS-47K	Integrator Network
R65	330KΩ	½	63-1890	BTS-330K	Vertical Osc. Grid - See Note 2
R66	2.2Meg	½	63-1926	BTS-2.2Meg	Vertical Osc. Plate
R67	15KΩ	½	63-1835	BTS-15K	Voltage Divider
R68	100KΩ	½	63-1869	BTS-100K	Vertical Peaking
R69	22KΩ	½	63-1841	BTS-22K	Vertical Osc. Cathode
R70	150KΩ	½	63-1878	BTS-150K	Voltage Divider
R71	100KΩ	2	63-1882	BTB-100K	Voltage Divider
R72	27KΩ	½	63-1845	BTS-27K	Voltage Divider
R73	3.3Meg 20%	½	63-1933	BTS-3.3Meg	Vertical Amp. Grid
R74	560Ω	½	63-1775	BTS-560	Vertical Amp. Cathode
R75	100KΩ	½	63-1869	BTS-100K	Vertical Output Transformer Shunt
R76	1800Ω	2	63-1620	BTB-1800	Vertical Amp. Plate
R77	4700Ω	½	63-1813	BTS-4700	Horiz. Phase Disc. Diode Load
R78	1Meg	½	63-1911	BTS-1Meg	Horiz. Phase Disc. Diode Load
R79	1Meg	½	63-1911	BTS-1Meg	Horiz. Phase Disc. Diode Load
R80	1Meg	½	63-1911	BTS-1Meg	AFC Filter
R81	100KΩ	½	63-1869	BTS-100K	AFC Filter
R82	100KΩ	1	63-2137	BTA-100K	Horiz. AFC Plate
R83	100KΩ	½	63-1869	BTS-100K	Horiz. Osc. Grid
R84	470Ω	½	63-1771	BTS-470	Horiz. Osc. Cathode
R85	47KΩ	½	63-1855	BTS-47K	Voltage Divider
R86	33KΩ	½	63-957	BTA-33K	Horiz. Osc. Plate
R87	18KΩ	½	63-1838	BTS-18K	Horiz. Discharge Network
R88	330KΩ	½	63-1890	BTS-330K	Horiz. Discharge Grid - See Note 2
R89	100Ω	½	63-1744		Parasitic Suppressor
R90	470KΩ 20%	½	63-1898	BTS-470K	Horiz. Output Grid
R91	150Ω	5	65-2134	1 3/4A-150	Horiz. Output Cathode - Wire Wound
R92	47Ω	1	63-970		Horiz. Output Cathode
R93	15KΩ	10	63-2425	1 3/4A-15K	Horiz. Output Screen
R94	6800Ω	½	63-1820	BTS-6800	Horiz. Peaking
R95	68KΩ	1	63-1979	BTA-68K	Horiz. Feedback Network - See Note 5
R96	68KΩ	1	63-1979	BTA-68K	Horiz. Feedback Network - See Note 5
R97	180KΩ	½		BTS-180K	Voltage Divider
R98	5500Ω	5	63-3136		Voltage Divider
R99	4.7Ω	½	63-1581		Series HV Filament
R100	470KΩ	½	63-1898		HV Filter
R101	4000Ω	5	63-2017	1 3/4A-4000	Focus Coil Shunt - Wire Wound - See Note 1
R102	4000Ω	5	63-2017	1 3/4A-4000	Focus Coil Shunt - Wire Wound - See Note 1
R103	470Ω	½	63-1771	BTS-470	Isolation
R104	100KΩ	½	63-1869	BTS-100K	Line Isolation - See Note 1
R105	8200Ω	½		BTB-8200	Peaking Coil Shunt - See Note 4
R106	400Ω	5	63-2077	1 3/4A-400	Filter
R107	100Ω	½	63-1744	BTS-100	Decoupling
R159	5500Ω	5	63-3136		Bleeder - See Note 1 - Wire Wound

Note 1 Not used in all models.
Note 2 Some models use resistors in parallel to obtain desired value.
Note 3 Some models use 750KΩ resistor in this application.
Note 4 Some models use 33KΩ resistor in this application.
Note 5 Some models use resistors in series to obtain desired value.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC	730VCT	430VCT	5VAC	95-1260			TP-358
	① 2.15A	.190ADC	.100ADC	① 3A				
				5VAC				
				① 2A				
				SEC. 5				
				12.6VCT				
				① 6A				

TRANSFORMER (REMOTE)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T2	117VAC	24VAC			95-1255			
	① .67A	② 2A						

TRANSFORMER (SWEEP CIRCUITS)

ITEM No	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA ZENITH PART No	STANCOR PART No	MERIT PART No	CHICAGO PART No.	NOTES
T3	265Ω Tap 29Ω	4.5Ω Tap 1.1Ω SEC. 3 0Ω	S-17927		HVO 7		Horiz. Output Trans.
T4	810Ω	13Ω	95-1239	A-8112 ①	A-3038	TSO-5	Vert. Output Trans.
T5A	16Ω		95-1263	DY-7	MDF-70		Horiz. Deflection Coils
B	52Ω						Vert. Deflection Coils
T6	3300Ω		S-17290 ②				Focus Coil

① Drill one new mounting hole.
② Not used in all models.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEADANCE PRI.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA ZENITH PART No.	STANCOR PART No.	MERIT PART No	CHICAGO PART No	INSTALLATION NOTES
T7	9KΩ	4.5K	700Ω .7Ω	95-1238	A-3879 ①	A-2933 ①	RO-16 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA ZENITH PART No.	VIKING PART No.	QUAM PART No.	NOTES
	FIELD RES.	V. C. IMP.				
SP1A	PM	4.5Ω	49-696	52574	52A1	
B	PM	4.5Ω	49-649	10J12	10A4A	
C	PM	4.5Ω	49-694	12J12	12A4A	
	CONE DIA.	V. C. DIA.				
SP2A	5 1/4"	9/16"	ZC5093			
B	10"	1"	ZC1081			
C	12"	1"	ZC1281			

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	RATINGS D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~v)	REPLACEMENT DATA ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	150A	190Ω	4.3 Henries	95-1170	C-2325 ①	C-2994	TH-4200 ①	① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES PRI.	DC RES SEC.	REPLACEMENT DATA ZENITH PART No.	NOTES
L2	Ant. Coil	.1Ω	.1Ω	S-17173	
L3	Conv. Plate Coil	.2Ω		S-17104	Tap .1Ω
L4	Osc. Coil	0Ω		S-16265	
L5	Trap Coil	0Ω		S-16501	
L6	1st. Video IF	.1Ω		S-16274	
L7	2nd. Video IF	.1Ω	.1Ω	S-16275	
L8	RF Choke			20-294	2.2 Microhenries(Not used in all models.)
L9	Fil. Choke	.1Ω		S-16984	
L10	RF Choke			20-294	2.2 Microhenries(Not used in all models.)
L11	3rd. Video IF	.2Ω	.1Ω	S-16604	
L12	RF Choke			20-294	2.2 Microhenries(Not used in all models.)
L13	4th. Video IF	.1Ω	.1Ω	S-16505	
L14	RF Choke			20-294	2.2 Microhenries(Not used in all models.)
L15	Peaking	1.5Ω		S-15128	
L16	Peaking	5.1Ω		S-17505	
L17	Peaking	7.5Ω		S-16011	
L18	Peaking	18Ω		S-17053	
L19	4.5MC Trap	1.6Ω		S-17116	
L20	Peaking	8Ω		S-17052	
L21	1st. Sound IF	.8Ω	1.8Ω	S-16855	
L22	2nd. Sound IF	5.8Ω		S-16736	Tap 4.8Ω
L23	Quadrature Coil	4.6Ω		S-16013	
L24	Horiz. Osc.	140Ω		S-17114	Tap 61Ω
L25	Width Coil	18Ω		S-17175	Tap 6Ω
L26	Horiz. Line.	10Ω		S-17176	Tap 6Ω

FUSES

ITEM No.	TYPE	RATING	REPLACEMENT DATA ZENITH PART No. FUSE	ZENITH PART No. HOLDER	LITTELFUSE PART No. FUSE	LITTELFUSE PART No. HOLDER	REMARKS
M1	3AG Slo Blo	175MA	136-20		313.175	357001	

DIAL LIGHTS

ITEM No	BASE TYPE	VOLTS	AMPS	BEAD COLOR	REPLACEMENT DATA ZENITH PART No	NOTES
M2	Bayonet	6-8	.15	Brown	100-38	Type # 47

ZENITH MODELS H2229R, H2230E, R, H2241R, H2242E, R, H2252R, H2253E, H2254R, H3273E, H3274R, H3284R

TV PARTS LIST AND DESCRIPTIONS (Continued)

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M3	RF Tuner		
M4	5th. Video IF	S-17472	(.1Ω) — Video Det. Assembly
M4	Capacitor	22-1874	7MMF. — Video Det. Assembly
M4	Capacitor	22-2216	500MMF. — Video Det. Assembly
M4	Crystal	103-1	(1N64) — Video Det. Assembly
M4	Resistor	63-1862	68KΩ — Video Det. Assembly
M4	Peaking	S-17504	— Video Det. Assembly
M4	Resistor	63-1813	4.7KΩ — Video Det. Assembly
M5	Integrator	87-1	
M6	Ion Trap	S-17164	
M7	Hand Control &Cable	S-17267	Complete
M8	Motor	141-130	Drive — Remote Control Assy. Part # S-17266
M9	Magnet Coil	20-332	— Remote Control Assy. Part # S-17266
M16	Focus Magnet	S-18012	Alternate (Not used in all models)
B1	Trimmer		Horiz. Drive (50-300MMF.)
	Control Cap	15-97	Used on S-17267
	Knob	46-897	Push (White)
	Knob	46-898	Push (Black)
	Remote and Hand Control & Cable Assy	S-17268	Complete Assembly
	Planetray Gear and Yoke	S-17211	Assembly
	Drive Gear Assy.	S-17317	
	Cable, Socket and Bracket	S-17324	
	Output Gear Assy.	S-17378	Includes Set Screw
	Channel Strip	S-16862	Channel #2
	Channel Strip	S-16863	Channel #3
	Channel Strip	S-16864	Channel #4
	Channel Strip	S-16865	Channel #5
	Channel Strip	S-16866	Channel #6
	Channel Strip	S-16867	Channel #7
	Channel Strip	S-16868	Channel #8
	Channel Strip	S-16869	Channel #9
	Channel Strip	S-16870	Channel #10
	Channel Strip	S-16871	Channel #11
	Channel Strip	S-16872	Channel #12
	Channel Strip	S-16873	Channel #13

RADIO PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		ZENITH PART No.	STANDARD REPLACEMENT		
V23	FM-AM RF Amp.	6BA6	6BA6	7BK	
V24	FM-AM RF Amp.-Phono Pre-Amp.	12AT7	12AT7	9A	
V25	1st. FM-AM IF Amp.-Phono Osc.	6BA6	6BA6	7BK	
V26	2nd. FM-AM IF Amp.	6BA6	6BA6	7BK	
V27	3rd. FM IF Amp.	6AU6	6AU6	7BK	
V28	Discriminator-AM Detector-AVC-AF Amplifier	6T8	6T8	9E	
V29	Phase Inverter	9002	9002	7BS	
V30	Power Output	6V6GT	6V6GT	7AC	
V31	Power Output	6V6GT	6V6GT	7AC	
V32	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C87A	40	450	22-1612	AFH2-57		UPT4445		TVL-2764	▲ Filter
B	40	450							▲ Filter
C88A	40	450	22-2243	AFH2-56		UP4245		TVL-3780	▲ Decoupling
B	20	350							▲ Decoupling
C89	15		22-2140	SI15	D6-150		GP1K-500	5GA-Q15	FM RF Coupling
C90	15		22-2140	SI15	D6-150		GP1K-500	5GA-Q15	FM Ant. Isolation
C91	.05	200	22-178	P288-05	DF-503	PTE4S5		2TM-S5	AM RF Coupling
C92	10			SI10NP0	TCZ-10		NP0K-100	5TCC-Q1	Fixed Trimmer
C93	1000		22-1676	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	RF Amp. Screen
C94	110		22-5	SI110					RF Amp. Plate
C95	22		22-1506	SI22N080			N080-331-220		Fixed Trimmer
C96	1000		22-1676	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	FM RF Coupling
C97	1000		22-1676	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	AM RF Coupling
C98	1000		22-1676	SI1000	D6-102	1W5D1	GP2L-102	5HK-D1	Osc. Plate Dec.
C99	22		22-1506	SI22N080			N080-331-220		Fixed Trimmer
C100	50		22-1761				N330L-500		Osc. Grid Cap.
C101	1		22-1762		TCZ-1		NP0K-010	5HK-S1	Osc. Coupling
C102	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Conv. Plate Decoupling
C103	.002	600	22-1220	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	Phono Audio Coupling
C104	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	AVC Filter-Phono Audio Coup.
C105	.002	600	22-1220	P688-002	D6-202	PTE6D2	GP2-333-202	6TM-D2	1st. IF Amp. Dec.
C106	.0022	600	22-492	P688-0022	D6-222	PTE6D2	GP2-333-222	6TM-D22	2nd. IF Amp. Dec.
C107	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	2nd. IF Amp. Cathode
C108	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	2nd. IF Amp. Fil.
C109	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	RF Bypass
C110	25		22-1887	SI25	D6-250	5W5Q25	GP1K-250	5GA-Q25	FM IF Coupling
C111	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	3rd. FM IF Amp. Dec.
C112	.001	600	22-1203	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	De-emphasis
C113	200		22-1668	SI200	D6-201	5W5T2	GP2K-221	5GA-T2	Diode RF Filter
C114	110		22-5	SI110					Diode RF Filter
C115	110		22-5	SI110					Diode RF Filter
C116	.02	600	22-830	P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C117	250			SI250	D6-251	5W5T25	GP2K-251	5GA-T27	Tone Comp.
C118	1000	500	22-348	1468-001	D6-102	1W5D1	GP2L-102	1FM-21	Tone Comp.
C119	.05	200	22-178	P288-05	DF-503	PTE4S5		2TM-S5	Tone Comp.

RADIO PARTS LIST AND DESCRIPTIONS (Continued)

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA ZENITH PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C120	.2	200	22-1531	P488-22		GT4P2		2TM-P22	Tone Comp.
C121	.001	600	22-1203	P688-001	D6-102	PTE6D1	GP2L-102	6TM-D1	Tone Comp.
C122	75	500	22-1256	1468-000075	D6-750		GP1K-750	1FM-475	Tone Comp.
C123	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Audio Coupling
C124	330	500	22-1645	1468-00035	D6-331		GP2K-331	1FM-335	AF Amp. Plate
C125	.05	600	22-171	P688-05	DF-503	PTE6S5		6TM-S5	Audio Coupling
C126	.02	600	22-830	P688-02	DF-203	PTE6S2		6TM-S2	Audio Coupling
C127	.002	1600	22-1802	P1688-002		PTE16D2		MB-D2	Power Output Plate
C128	.0047	600	22-1782	P688-0047	D64472	PTE6D5	GP2-333-472	6TM-D47	Line Filter
C129A	10000			BPD-01 }	DD-3-103	{ 1D3S1	821-01	5HK-S1	Line Filter
B	10000			BPD-01 }		{ 1D3S1	821-01	5HK-S1	Line Filter
C130A	10000			BPD-01 }	DD-3-103	{ 1D3S1	821-01	5HK-S1	Fil. Filter
B	10000			BPD-01 }		{ 1D3S1	821-01	5HK-S1	Line Filter
C131	.05	200		P488-02	DF-203	PTE4S2		2TM-S2	Phono Audio Coupling
C132	50		22-1761	SI50	D6-500	5W5Q5	GP1K-500	5GA-Q5	Fixed Trimmer
C133	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Tone Comp.
C134	110		22-5	SI110					FM RF Coupling
C135	10000		22-3	BPD-01	DD-103	1D3S1	821-01	5HK-S1	Conv. Fil. *

* Not used in all models.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ZENITH PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R108A	1Meg	½	63-2139	Q13-137	AG-63-Z	AN-70	Volume Control
B	Shaft		Not req.	Not req.	KSS-3	AK-4	Attach to R108A per instructions
C	Switch		Not req.	76-1	SWB	K-155	Attach to R108A per instructions

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA ZENITH PART No.	IRC PART No.	IDENTIFICATION CODES
R109	33Ω	½	63-1722		Parasitic Suppressor
R110	1Meg	½	63-1912	BTS-1Meg	AVC Network
R111	220Ω	½	63-1758	BTS-220Ω	FM-AM RF Amp. Screen
R112	220Ω	½	63-1758	BTS-220	FM-AM RF Amp. Plate Decoupling
R113	10KΩ	½	63-1827	BTS-10K	Osc. Grid
R114	470Ω	½	63-1771		Parasitic Suppressor
R115	220Ω	½	63-1758	BTS-220	Osc. Plate Decoupling
R116	2.2Meg	½	63-1926	BTS-2.2Meg	Converter Grid
R117	470Ω	½	63-1771		Parasitic Suppressor
R118	2.2Meg	½	63-1926	BTS-2.2Meg	AVC Network
R119	2.2Meg	½	63-1926	BTS-2.2Meg	AVC Network
R120	1000Ω	1		BTA-1000	Converter Plate Decoupling
R121	220KΩ	½	63-1884	BTS-220K	Voltage Divider
R122	22KΩ	2	63-2141	BTB-22K	Voltage Divider
R123	1500Ω	½	63-1793	BTS-1500	1st. FM-AM IF Amp. Decoupling
R124	33KΩ	½		BTS-33K	Voltage Divider - See Note 2
R125	10KΩ	½	63-1827	BTS-10K	Voltage Divider
R126	4700Ω	2		BTB-4700	Filter
R127	100Ω	½	63-1744	BTS-100	2nd. FM-AM IF Amp. Cathode
R128	820Ω	½		BW-½-820	2nd. FM-AM IF Amp. Decoupling - Wire Wound
R129	100KΩ	½	63-1869	BTS-100K	3rd. FM IF Amp. Grid
R130	27KΩ	½	63-1845	BTS-27K	3rd. FM IF Amp. Decoupling
R131	22KΩ	½	63-1842	BTS-22K	AVC Diode Filter
R132	22KΩ	½	63-1842	BTS-22K	AVC Diode Filter
R133	220KΩ	½	63-1884	BTS-220K	AVC Network
R134	150KΩ	½	63-1876	BTS-150K	Discr. Diode Load
R135	150KΩ	½	63-1876	BTS-150K	Discr. Diode Load
R136	100KΩ	½	63-1869	BTS-100K	De-emphasis
R137	33KΩ	½	63-1848	BTS-33K	De-emphasis
R138	4.7Meg	½	63-1940	BTS-4.7Meg	AF Amp. Grid
R139	220KΩ	½	63-1884	BTS-220K	AF Amp. Plate
R140	330KΩ	½	63-1890	BTS-330K	Phase Inverter Grid
R141	47KΩ	½	63-1855	BTS-47K	Phase Inverter Plate
R142	2200Ω	½	63-1799	BTS-2200	Phase Inverter Cathode
R143	470KΩ	½	63-1897	BTS-470K	Feedback
R144	470KΩ	½	63-1897	BTS-470K	Output Grid
R145	270Ω	2	63-1452	BW-2-270	Output Cathode - Wire Wound
R146	330KΩ	½	63-1890	BTS-330K	Output Grid
R147	6800Ω	½	63-1820	BTS-6800	Tone Compensation
R148	330Ω	½	63-1764	BTS-330	Tone Control Network
R149	33Ω	½	63-1722		Tone Control Network
R150	68KΩ	½		BTS-68K	Tone Control Network
R151	680Ω	½		BTS-680	Tone Control Network
R152	4700Ω	½		BTS-4700	Tone Control Network
R153	1Meg	½	63-1912	BTS-1Meg	Tone Control Network
R154	33Ω	½	63-1722		Tone Control Network
R155A	1000Ω	10	} 63-2138	*1 3/4AA-4000	Filter - Wire Wound
B	3000Ω	10	}		Filter - Wire
R156	130Ω	5	63-2142	1 3/4A-125	Filter - Wire Wound
R157	2.2Meg	½	63-1926	BTS-2.2Meg	FM-AM RF Amp. Grid - See Note 1
R158	22Ω	½			Parasitic Suppressor

* Set slider 1000Ω from output transformer.
Note 1 Not used in all models.
Note 2 Some models use 47KΩ resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	RATING SEC. 1	RATING SEC. 2	RATING SEC. 3	REPLACEMENT DATA ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T8	117VAC @ .93A	730VCT @ .125A	5VAC @ 2A	6.3VAC @ 3.5A	95-1253	PC-8410	P-3173	PV-120A

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA ZENITH PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T9	9KΩ	4.5Ω	600Ω	.3Ω	95-1252	A-3870	A-3027	RO-110 ①	① Drill one new mounting hole.

ZENITH MODELS H2229R, H2230E, R, H2241R, H2242E, R, H2252R, H2253E, H2254R, H3273E, H3274R, H3284R

RADIO PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

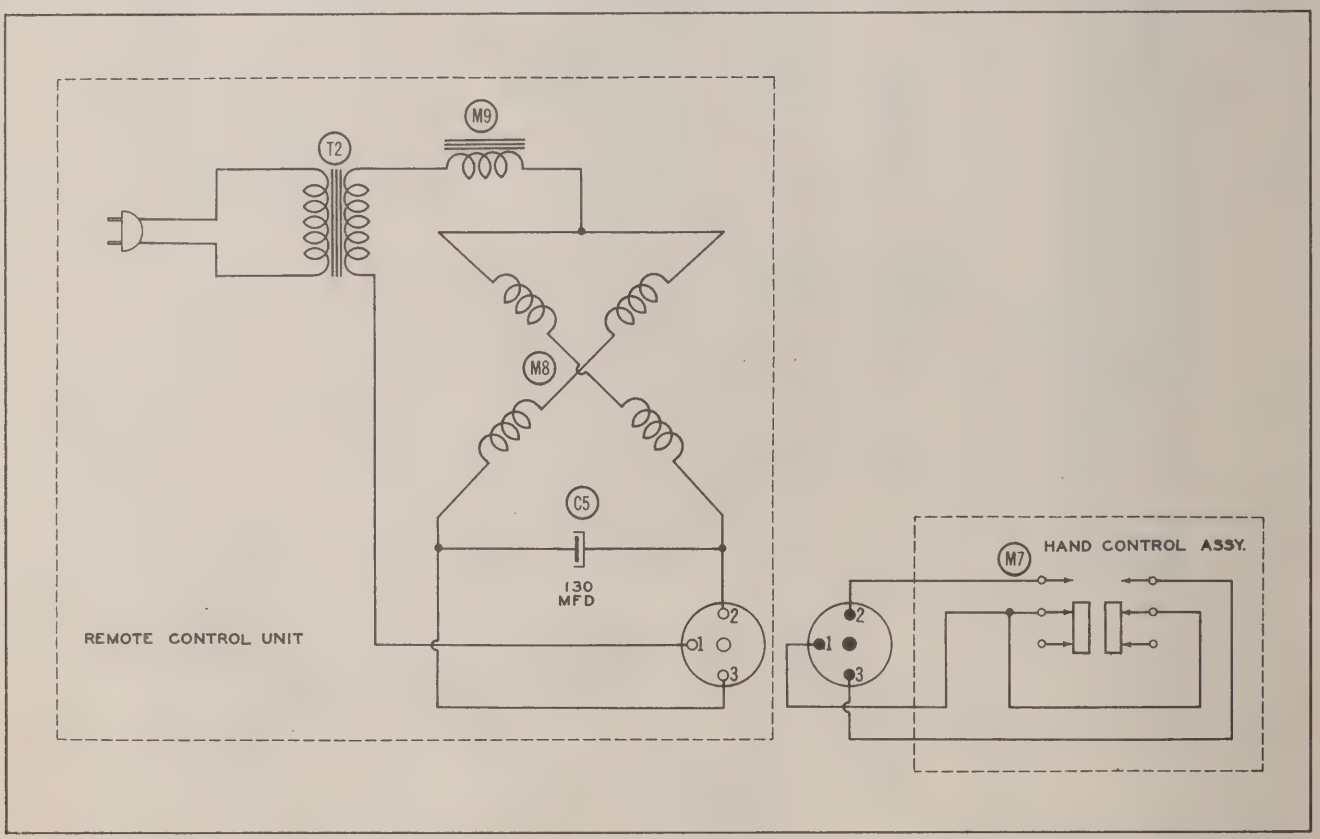
ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA	NOTES
L27	FM Ant. Coil	0Ω		S-16408		
L28	FM RF Coil	0Ω	0Ω	S-15743		
L29	FM Osc. Coil	0Ω	0Ω	S-15691		
L30	AM Loop Ant.	1Ω		S-15528		
L31	AM Ant. Loading Coil	3.2Ω		S-17328		
L32	RF Choke	0Ω				
L33	AM RF Coil	2.8Ω	12Ω	S-16344		Tap 3.6Ω
L34	RF Choke	0Ω				
L35	AM Osc. Coil	13Ω	5Ω	S-16345		Tap 3.7Ω (1.3Ω SEC.)
L36	RF Choke	0Ω				
L37	1st. FM IF	.4Ω	.4Ω	95-1201		
L38	1st. AM IF	13Ω	16Ω	95-1248		Primary Tap at 5Ω
L39	2nd. FM IF	.4Ω	.4Ω	95-1150		
L40	2nd. AM IF	18Ω	18Ω	95-1249		Primary Tap at .4Ω
L41	RF Choke	0Ω				
L42	3rd. FM IF	.4Ω	.4Ω	95-1150		
L43	3rd. AM IF	17Ω	11Ω	95-1254		
L44	RF Choke	0Ω				
L45	Discr. Trans.	.4Ω	.4Ω	95-1153		
L46	Tone Choke	2.5Ω		S-13800		
L47	RF Choke	0Ω				
L48	Phono Osc. Coil	2.1Ω		S-12603		
L49	Line Choke	0Ω				
L50	Tone Choke	0Ω				
L51	RF Choke	0Ω				
L52	Fil. Choke	.9Ω				
L53	RF Choke	0Ω				

DIAL LIGHTS

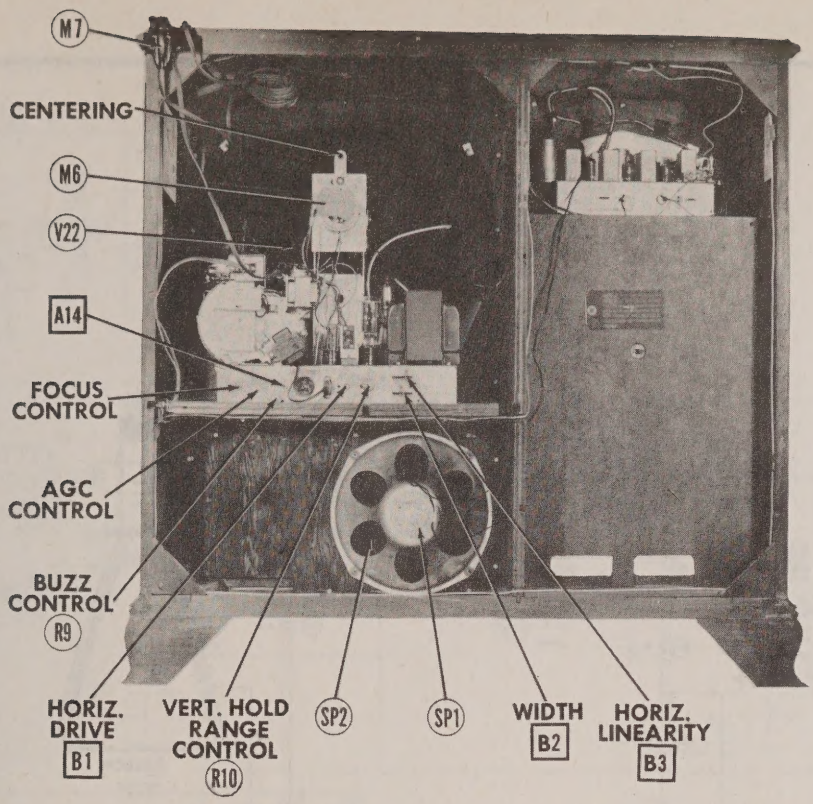
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA	NOTES
M12	Bayonet	6-8	.15	Brown	100-36		Type # 47
M13	Bayonet	6-8	.15	Brown	100-36		Type # 47

MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M14	Switch		Function (Phono-AM-FM)
M15	Tuning Cap	22-2104	21-488MMF., 40-222MMF., 12-164MMF.



REMOTE CONTROL UNIT



CABINET-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Adjust the horizontal hold control until the picture synchronizes horizontally.

Adjust the horizontal drive trimmer, (B1) counter-clockwise as far as possible without causing fold-over or instability in the picture.

Adjust the width slug, (B2), until the picture is slightly wider than necessary to fill the mask horizontally.

Adjust the horizontal linearity slug, (B3) until the picture is symmetrical from left to right.

Since both width and horizontal linearity are effected by the drive trimmer it may be necessary to adjust B1, B2, and B3 alternately for optimum results.

DISASSEMBLY INSTRUCTIONS

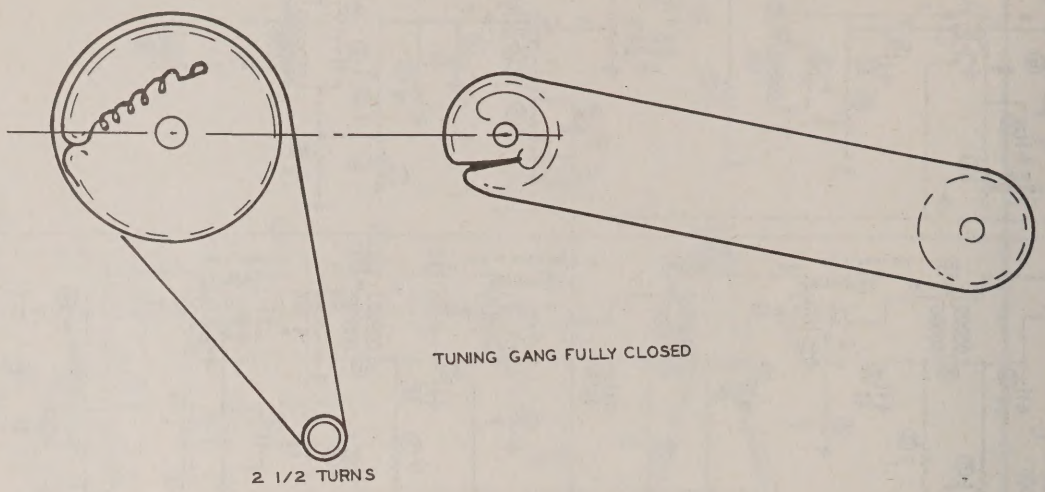
TELEVISION CHASSIS REMOVAL:

1. Remove seven push-on type control knobs.
2. Remove seven wood screws from rear cover. Remove rear cover.
3. Disconnect built-in antenna.
4. Disconnect speaker leads.
5. Disconnect radio power plug.
6. Remove four 3/8" bolts from chassis. Remove chassis.
7. Remove four 5/16" hex nuts from speaker. Remove speaker.

RADIO CHASSIS REMOVAL:

1. Remove three push-on type control knobs.
2. Disconnect speaker.
3. Disconnect FM antenna.
4. Disconnect phono audio jack.
5. Disconnect phono power plug.
6. Disconnect push-button controls.

NOTE: FOR PICTURE TUBE REMOVAL IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.



DIAL CORD STRINGING